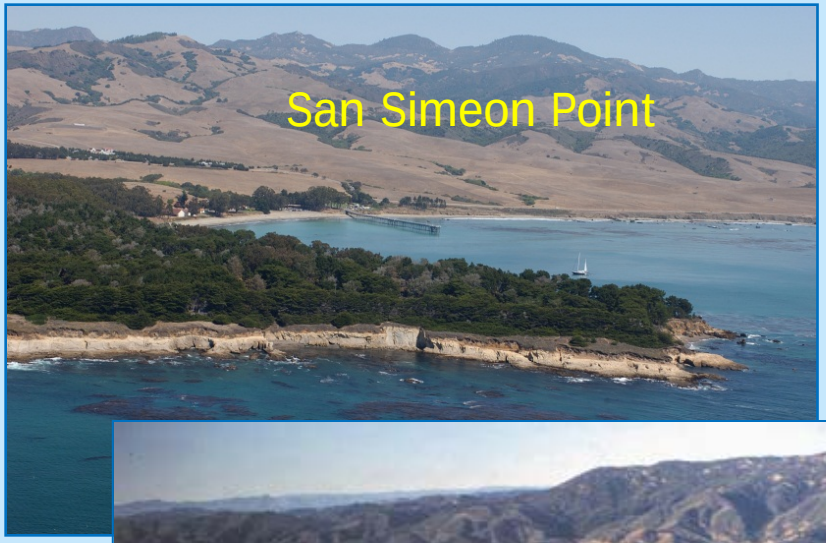
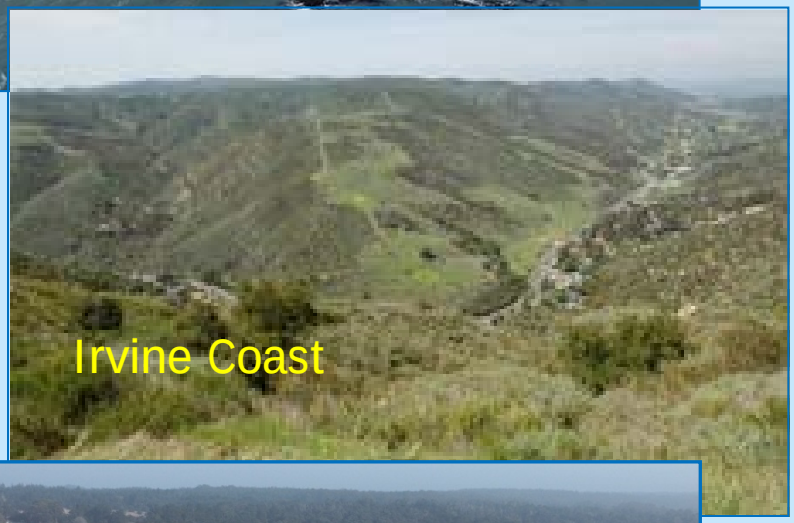
Assembly Select Committee on Sea Level Rise and the California Economy: The California Coastal Commission

Charles Lester
Executive Director
California Coastal Commission
State Capitol, Thursday, January 16, 2014


San Mateo County


San Simeon Point


Irvine Coast

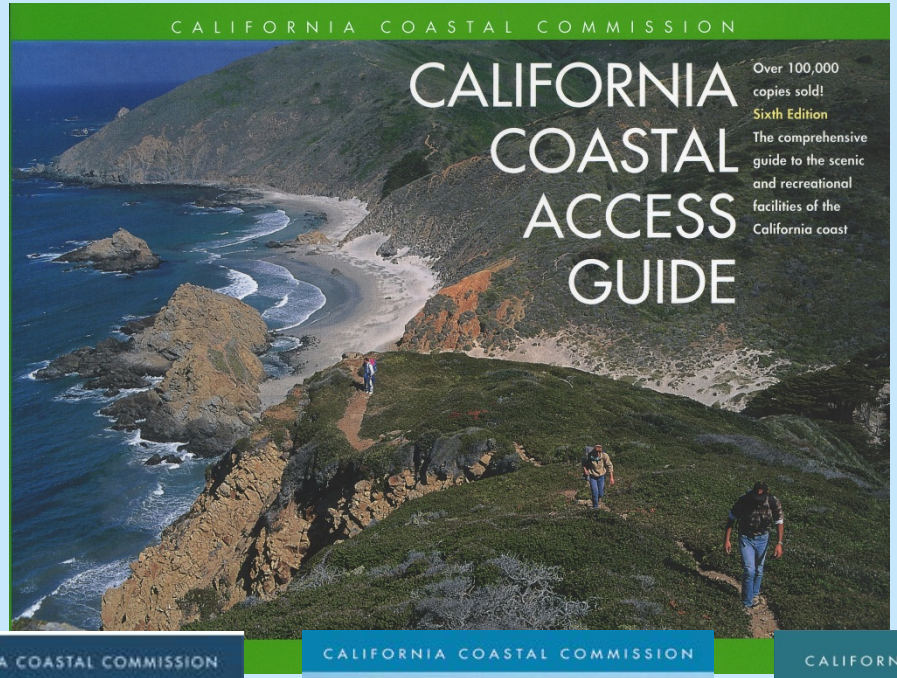

Gaviota Coast

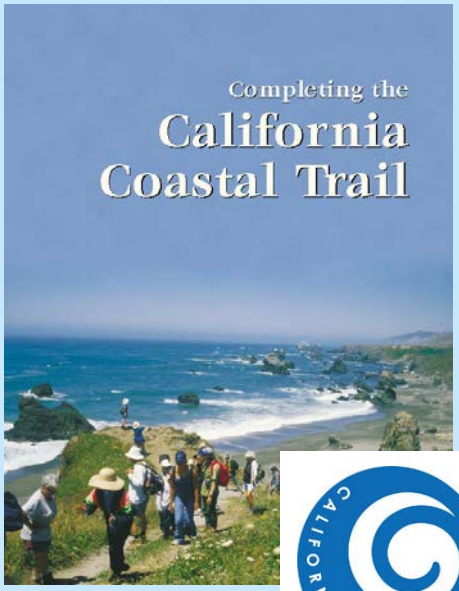

North Coast

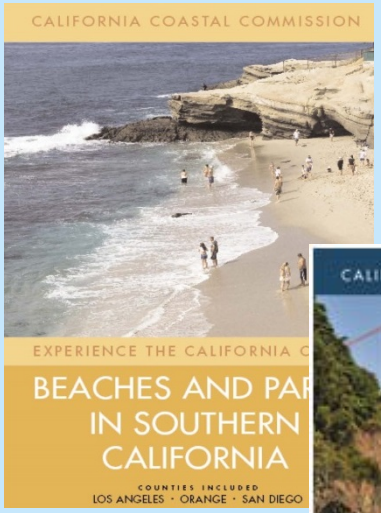

Big Sur

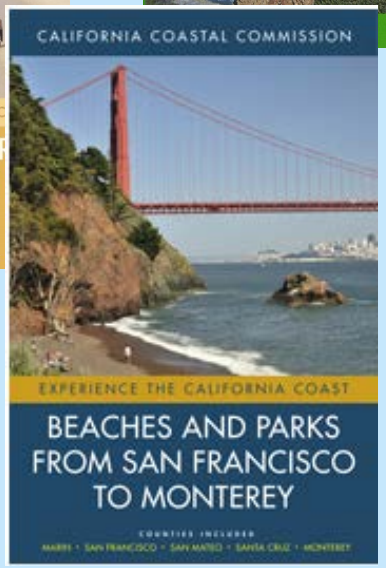
Batiquitos Lagoon

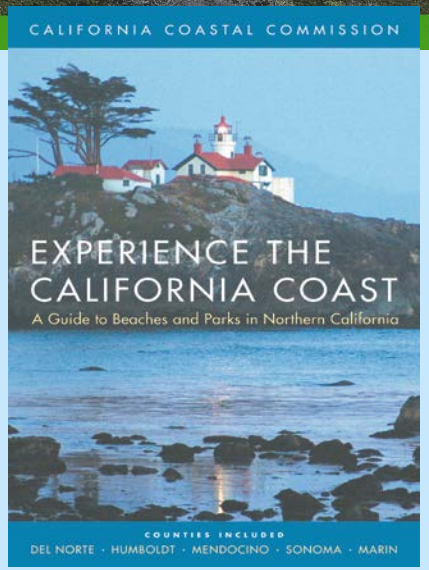
Public Access & Recreation



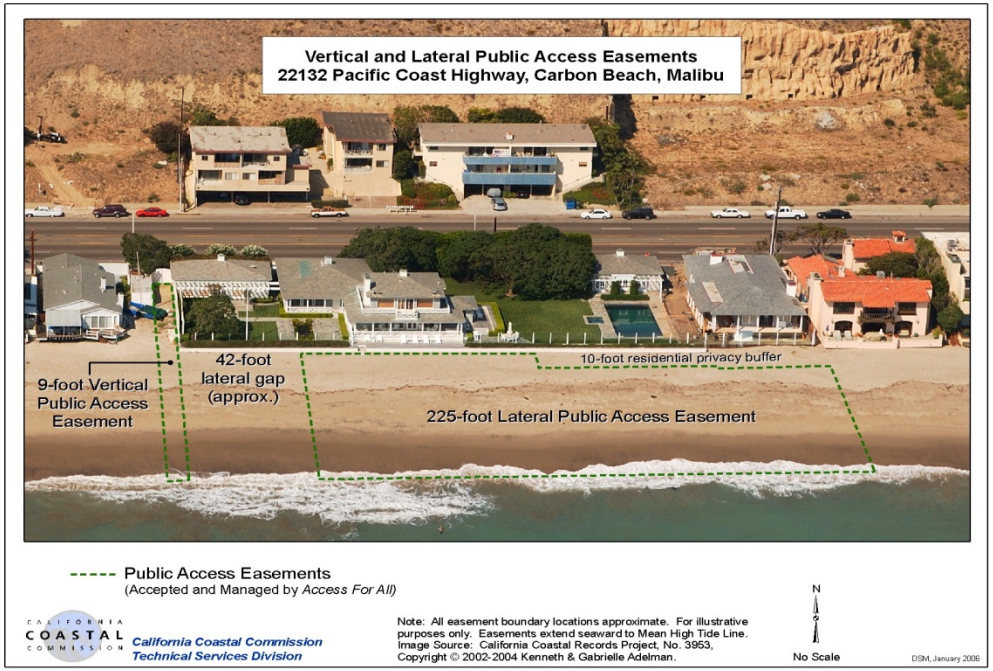








CARBON BEACH ACCESS



Coast and Ocean Economy

- **$40 Billion** Annual Coast and Ocean Economy (National Economics Program (2005))
- California Beach Valuation:
  - **$14 Billion** direct revenue, **$73 Billion** to National Economy, annually (King, 1999)
  - Up to **$7.5 Billion/year** in non-market value from California beach visits (Pendleton & Kildow, 2006)
  - **$38 Billion** annually and Californian's WTP **$25 billion/year** to protect state's beaches (King, 1997)

Partnerships are Key

- **61 Coastal Cities**
  - Crescent City
  - Trinidad
  - Arcata
  - Eureka
  - Fortuna
  - Fort Bragg
  - Point Arena
  - Daly City
  - Pacifica
  - Half Moon Bay
  - Santa Cruz
  - Capitola
  - Watsonville
  - Marina
  - Sand City
  - Seaside
  - Monterey
  - Pacific Grove
  - Carmel
  - Morro Bay
  - Pismo Beach
  - Grover Beach
  - Guadalupe
  - Goleta
  - Santa Barbara
  - Carpinteria
  - Ventura
  - Oxnard
  - Port Hueneme
  - Malibu
  - Los Angeles
  - Santa Monica
  - El Segundo
  - Manhattan Beach
  - Hermosa Beach
  - Redondo Beach
  - Torrance
  - Palos Verdes Estates
  - Rancho Palos Verdes
  - Long Beach
  - Avalon
  - Seal Beach
  - Huntington Beach
  - Costa Mesa
  - Newport Beach
  - Irvine
  - Laguna Beach
  - Aliso Viejo
  - Laguna Nigel
  - Dana Point
  - San Clemente
  - Oceanside
  - Carlsbad
  - Encinitas
  - Solana Beach
  - Del Mar
  - San Diego
  - Coronado
  - National City
  - Chula Vista
  - Imperial Beach

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  - Imperial Beach

- **15 Coastal Counties**
  - Del Norte
  - Humboldt
  - Mendocino
  - Sonoma
  - Marin
  - San Francisco
  - San Mateo
  - Santa Cruz
  - Monterey
  - San Luis Obispo
  - Santa Barbara
  - Ventura
  - Los Angeles
  - Orange
  - San Diego

Partnerships are Key

- Coastal Cities
  - Half Moon Bay
  - Santa Cruz
  - Capitola
  - Watsonville
  - Marina
  - Sand City
  - Seaside
  - Monterey
  - Pacific Grove
  - Carmel
  - Del Rey Oaks
  - Ventura
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  - Oceanside
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  - Mendocino
  - Sonoma
  - Marin
  - Santa Barbara
  - Ventura

Partnerships

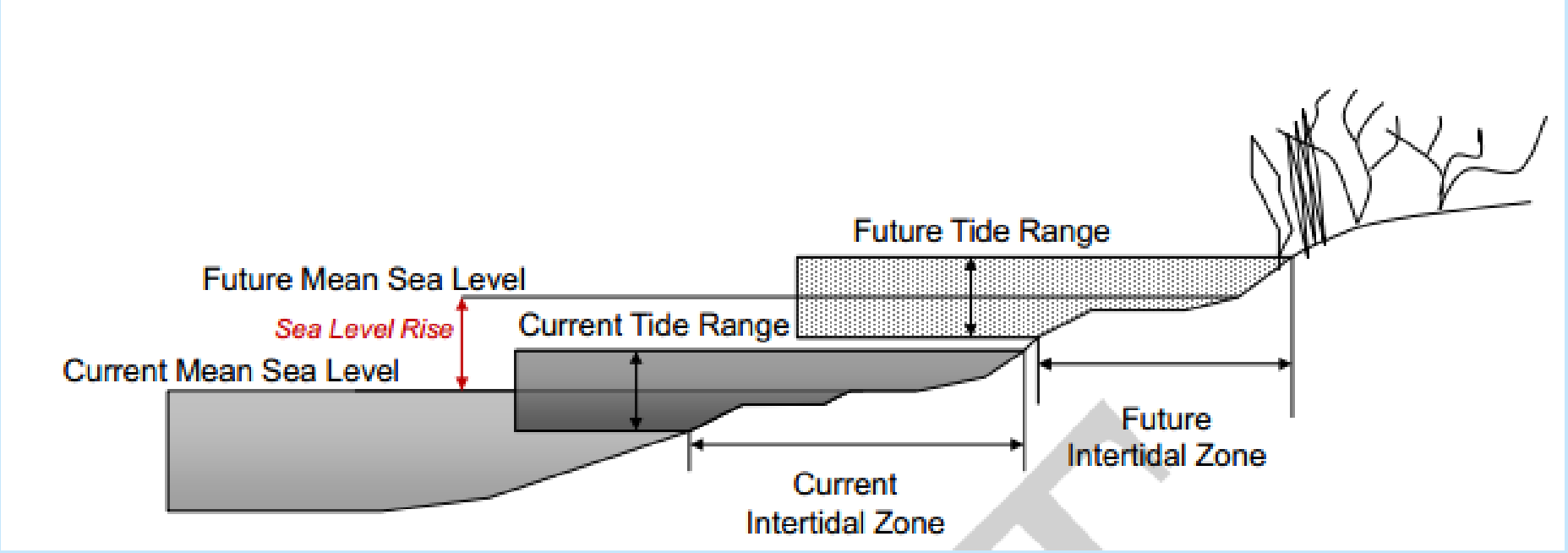
Partnerships are Key

- Ocean Protection Council
- State Lands Commission
- State Coastal Conservancy
- SF BCDC

Partnerships

- California State Parks
- Dept. of Fish and Wildlife
- Caltrans
- Federal Agencies

Water Level Determines Values



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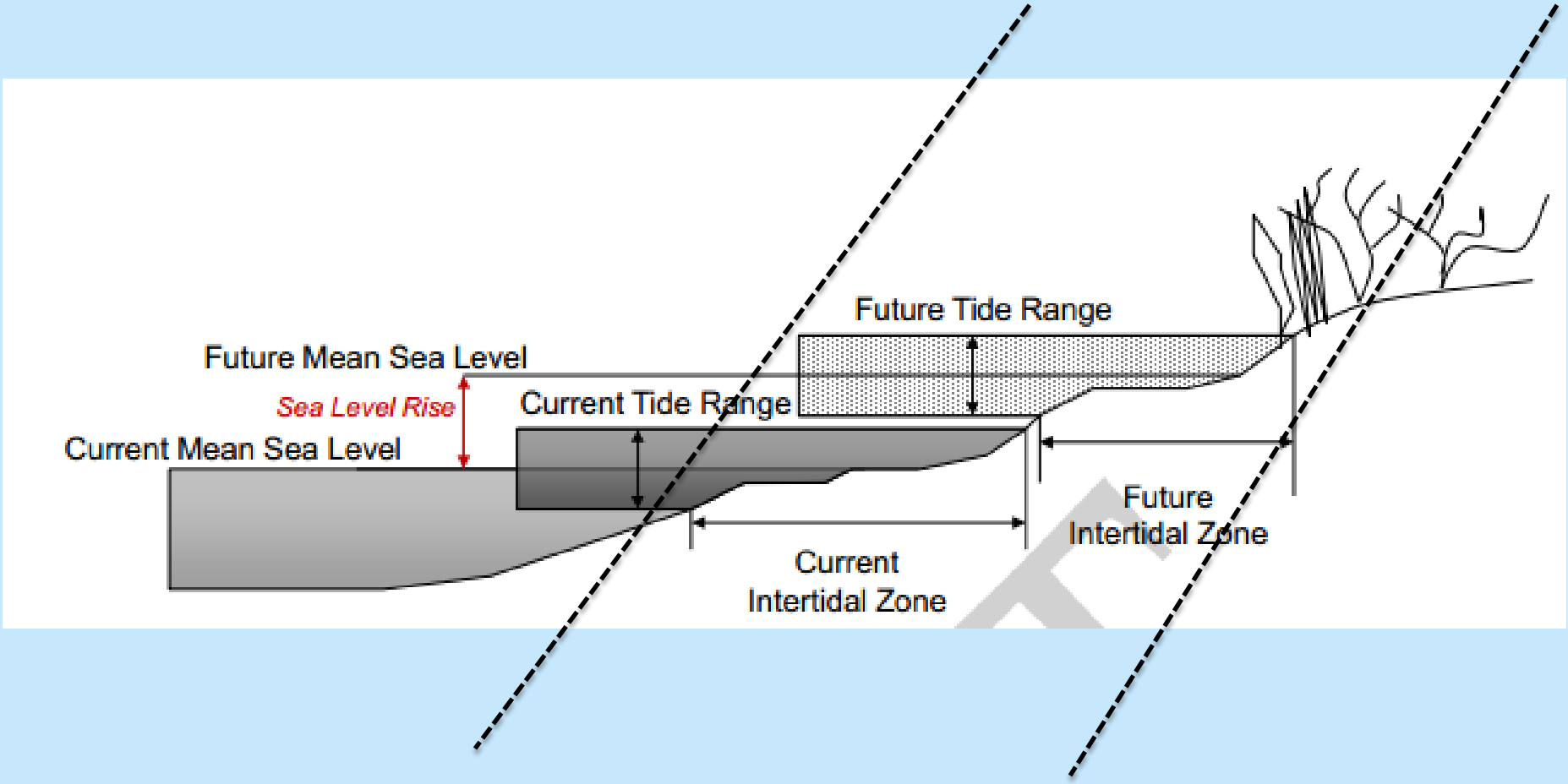
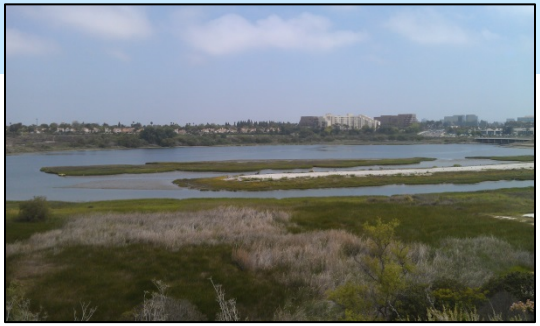
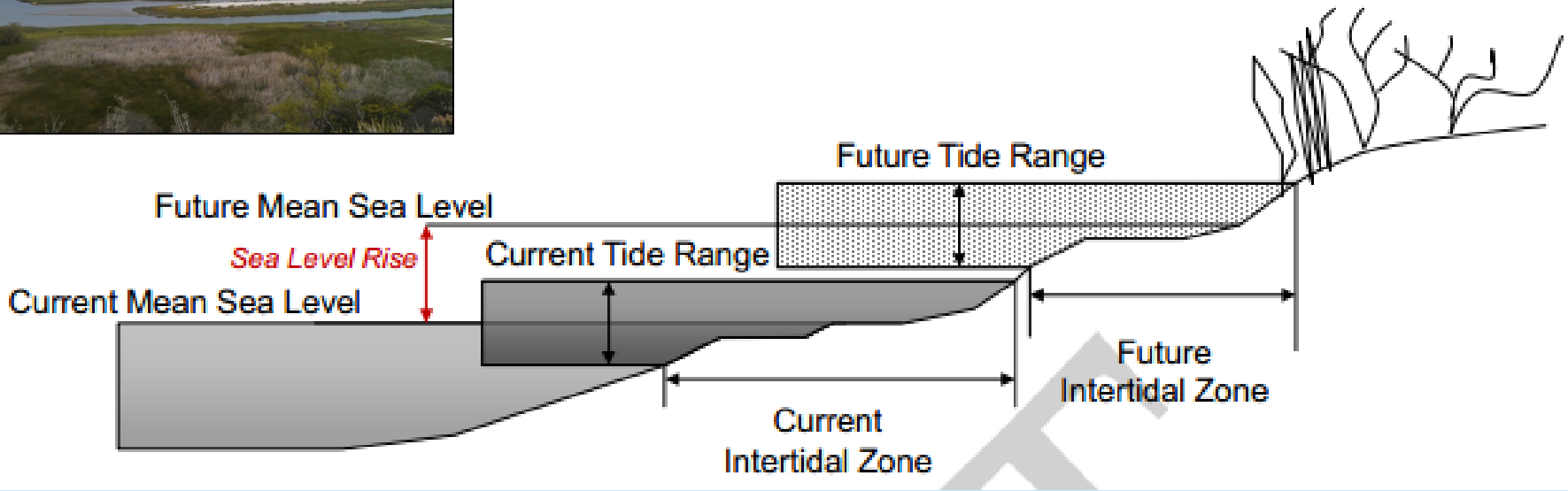
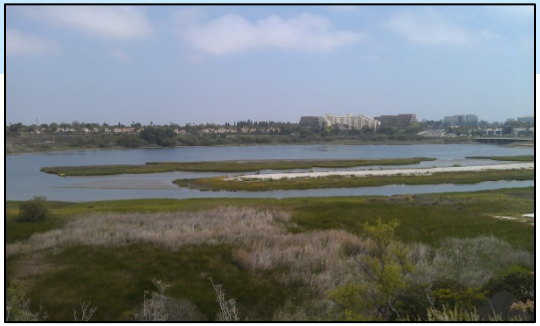


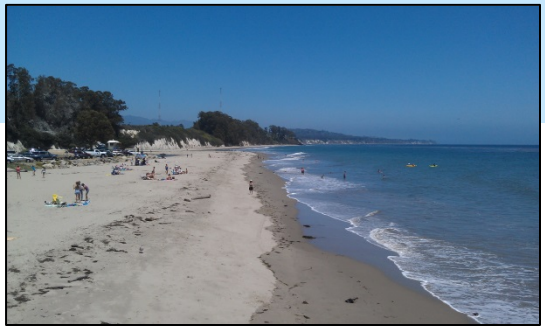
Water Level Determines Values

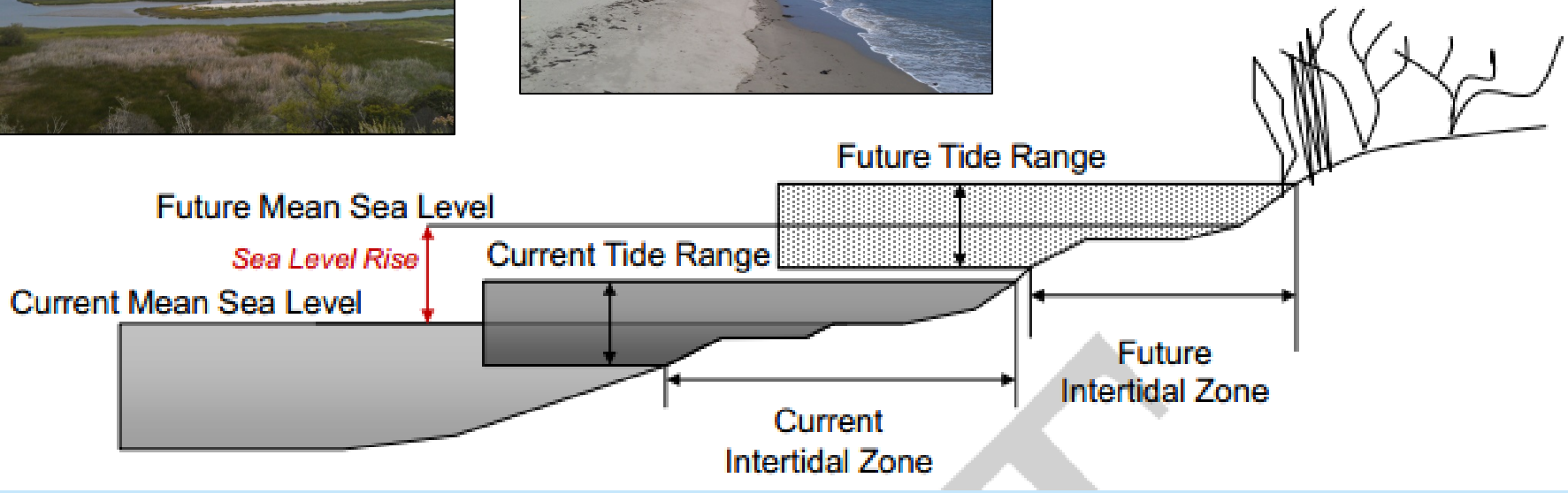




Water Level Determines Values







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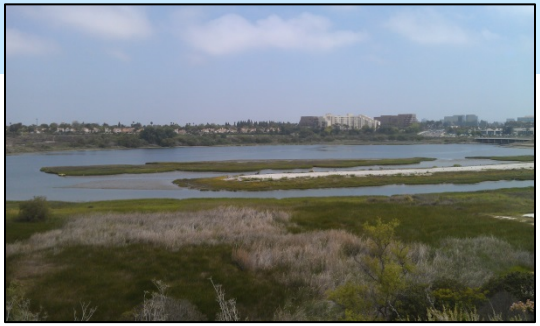
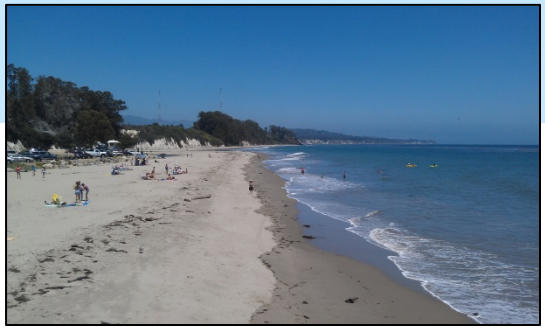
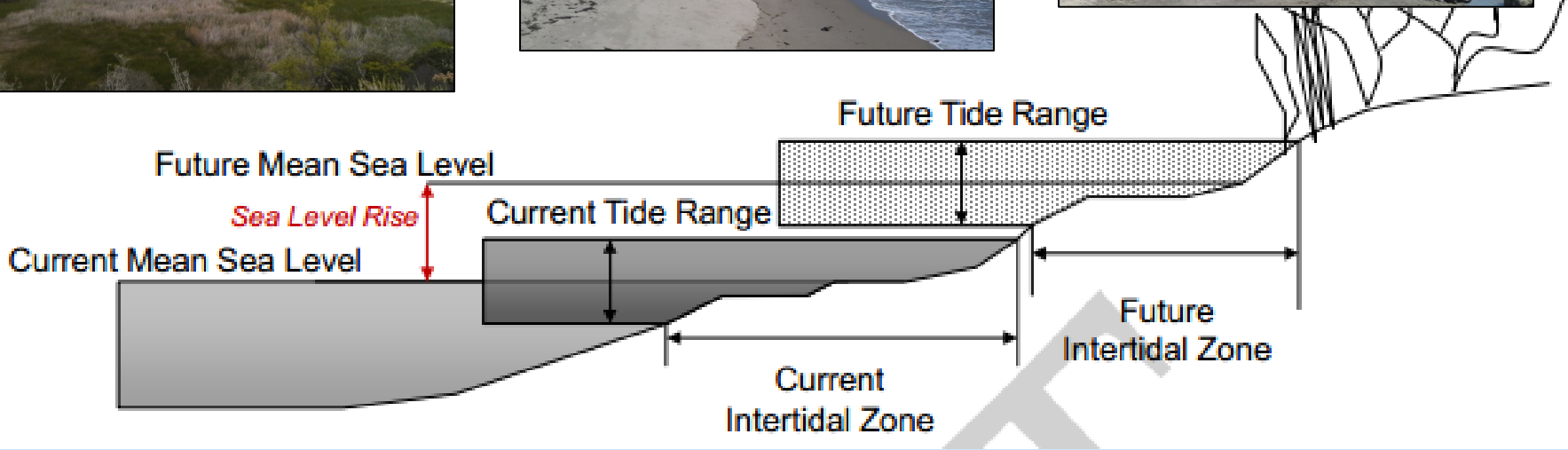






Coastal Act Framework

- Most Development in Coastal Zone must get a **permit** from the Commission or local government, and be consistent with the Coastal Act and Local Coastal Programs (LCPs).

- Local governments must prepare LCPs, approved by the Commission, that identify the **kinds, locations, and intensities of development**, and policies and regulations to implement the Coastal Act.

Coastal Act Hazards Management

- PRC 30253 requires that **new development** minimize risks to life and property and not require the construction of shoreline protective structures.
- PRC 30235 requires the Commission to approve shoreline structures for endangered **existing development** if it is the least environmentally-damaging, feasible alternative and sand supply impacts are mitigated.

Development Setback – Pismo Beach

LCP Setback Policies

- LCPs typically require new development to be setback to be safe for its “economic life”.
- Economic Life ranges from 50 to 100 years.
- 13 LCPs have polices that require specific consideration of sea level rise in setback determinations.
- For example, Crescent City LCP amendment (June, 2009): plan for 3-6 feet of sea level rise per century.

Risk Analysis – Determining Setbacks

Data Record: Episodic Bluff Retreat Events
20’ of retreat in 1954
10’ of retreat in 1959
30’ of retreat in 1968
10’ of retreat in 1971
10’ of retreat in 1987

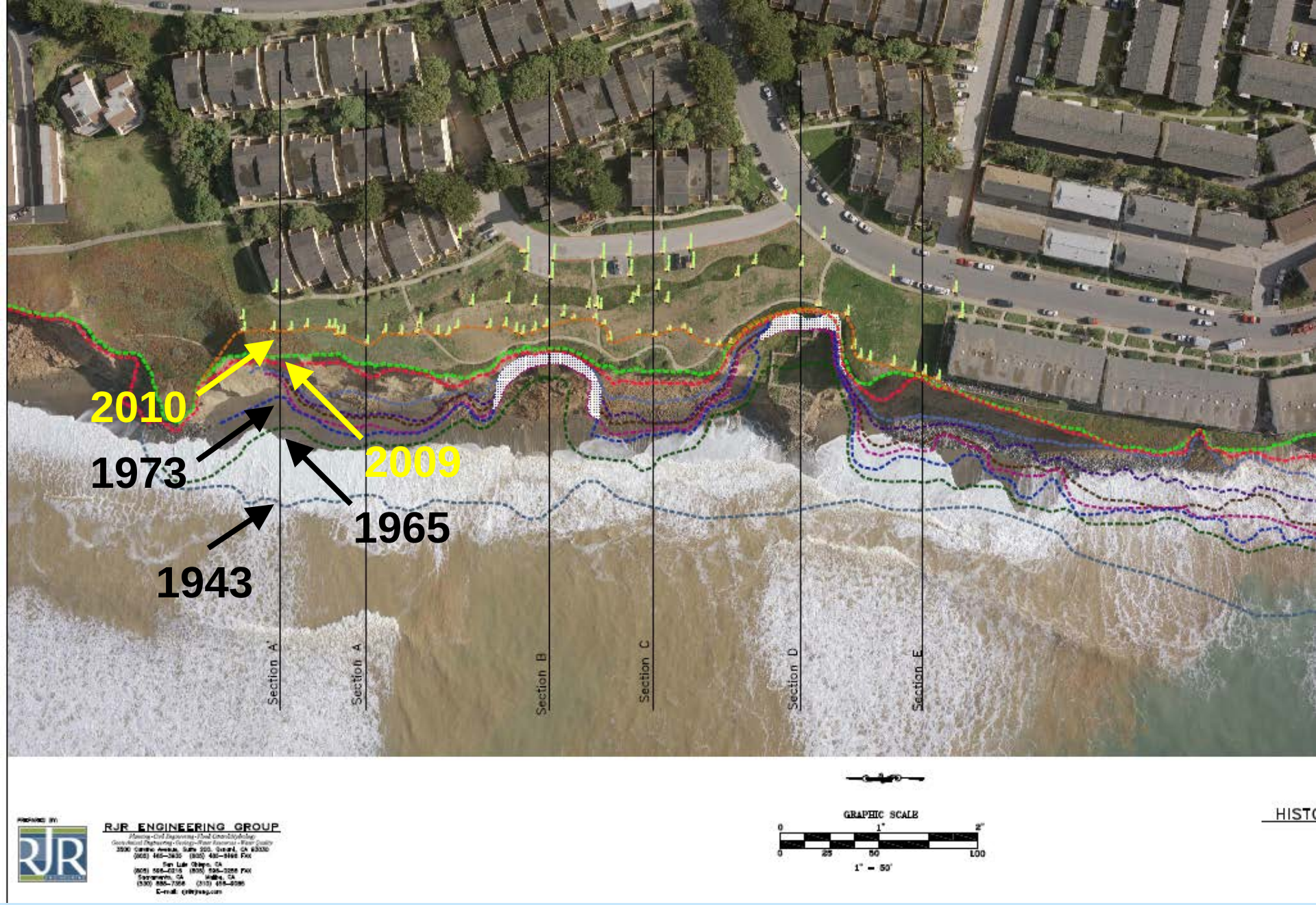
Theoretical Retreat Rates

Time Period	Total Measured Retreat	Erosion Rates	50-year Setback
1950-1990	80’	2 ft./yr.	100’
1960-1990	50’	1.67 ft./yr.	83’
1970-1990	20’	1 ft./yr.	50’

Cliffs Hotel – Pismo Beach

Cliffs Hotel – Pismo Beach

Cliffs Hotel – Pismo Beach


2010
1973
2009
1965
1943
Section A'
Section A
Section B
Section C
Section D
Section E
RJR ENGINEERING GROUP
GRAPHIC SCALE
0
1"
2"
0
25
50
100
1" = 50'

Land's End -- Pacifica

Land's End -- Pacifica

Lands End -- Pacifica

Charles Lester, California Coastal Commission, Assembly Select Comm on SLR

Lands End -- Pacifica

Projected Erosion – 75 years

F8a -- A-3-SNC-98-114 (SNG, Monterey Bay Shores Ecoresort)

Refined Slope stability setback methods

Establishing Development Setbacks from Coastal Bluffs
Mark J. Johnsson[1]

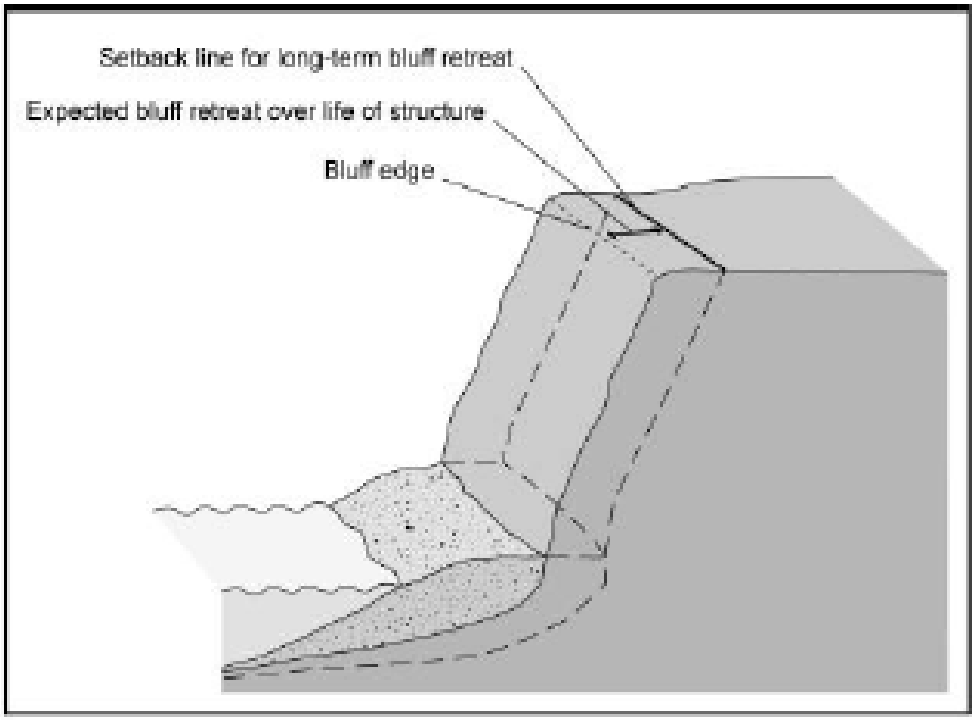


Figure 5. Establishing a development setback for long term bluff retreat. The expected bluff position at the end of the development's useful life is found by multiplying the average annual bluff retreat rate by the design life of the development; this line is taken to represent the minimum setback for long-term bluff retreat.

New Development Conditions

8. Coastal Hazards Assumption of Risk, Waiver of Liability, and Indemnity Agreement. By acceptance of this permit, the Permittees acknowledge and agree on behalf of themselves and all successors and assigns:

(a) That the site is subject to extreme coastal hazards including but not limited to episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunami, coastal flooding, landslides, and geologic instability;

(b) To assume the risks to the Permittees and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development;

(c) To unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards;

(d) To indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards, and;

(e) That any adverse effects to property caused by the permitted project shall be fully the responsibility of the Permittees.

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(a) That the site is subject to extreme coastal hazards including but not limited to

(b)

(c)

(d)

(e)

9. No Future Seawall or Shoreline or Bluff Protective Device. By acceptance of this Permit, the Permittees agree, on behalf of themselves and all successors and assigns, that:

(a) No shoreline protective device(s) (including, but not limited to, seawalls, revetments, gunnite, upper bluff retaining walls, gabion baskets, etc.) shall ever be constructed to protect the development authorized by this permit (including, but not limited to, the residence, foundations, wine cellar, garage and driveway) in the event that such development is threatened with damage or destruction from coastal hazards including, but not limited to, episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunami, coastal flooding, landslides, and geologic instability;

(b) The Permittees waive any rights to construct such devices that may exist under Public Resources Code Section 30235;

(c) The landowner(s) shall remove the development authorized by this Permit if any government agency has ordered that the structures are not to be occupied due to any of the coastal hazards identified above, and;

(d) In the event that portions of the development fall to the beach before they are removed, the landowner(s) shall remove all recoverable debris associated with the

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(b)

(c)

(d)

10. Future Marketing. All documents related to any future marketing and sale of the subject property, including but not limited to marketing materials, sales contracts, deeds, and similar documents, shall notify buyers that:

(a) Development seaward of the approved residence is prohibited except for maintenance of native landscaping and maintenance of existing development on the site such as split-rail fencing, stairs to the rocky shelf, etc.;

(b) That the site is subject to extreme coastal hazards including but not limited to episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunami, coastal flooding, landslide, and geologic instability;

(c) Shoreline protective device(s) (including, but not limited to, seawalls, revetments, gunnite, upper bluff retaining walls, gabion baskets, etc.) are prohibited to protect the development authorized by CDP A-3-SCO-06-006.

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(a)

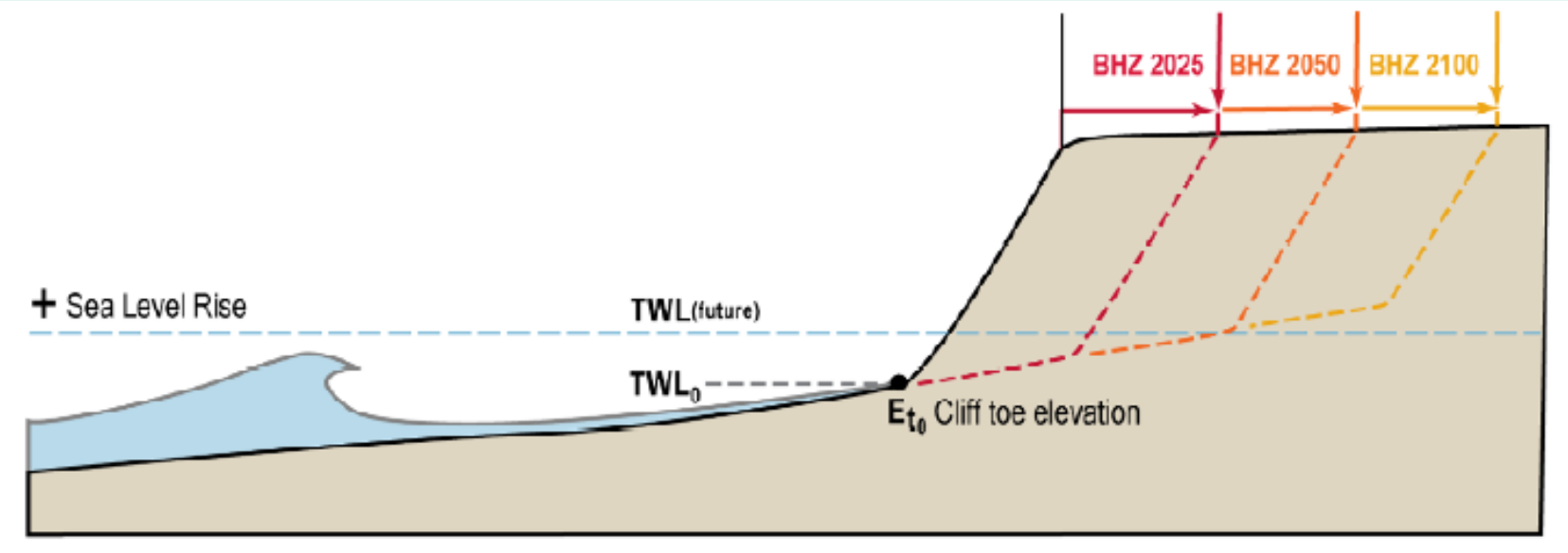
(b)

(c)

11. Deed Restriction. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittees shall submit for Executive Director review and approval documentation demonstrating that the Permittees have executed and recorded against the parcel governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the special conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property. The deed restriction shall include a legal description and site plan of the entire parcel governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

Black's Point – Santa Cruz

Cliff Erosion Model



- Acceleration of historic erosion rates (Rh)
- Prorated based on % increase in TWL exceeding the elevation of the toe of the beach/cliff junction
- Include geologic unit standard deviation x planning horizon to account for alongshore variability

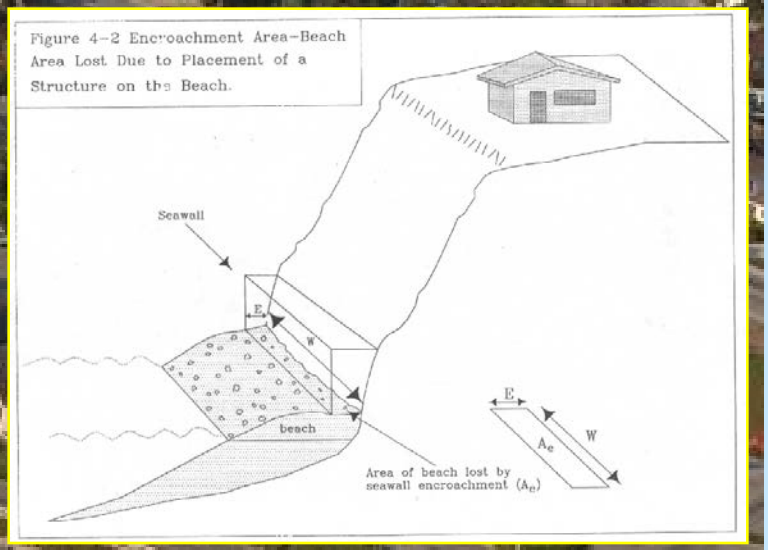
Dave Revell, PWA Presentation to CCC, 4/09/09

PWA
PHILIP WILLIAMS & ASSOCIATES, LTD
ENVIRONMENTAL HYDROLOGY

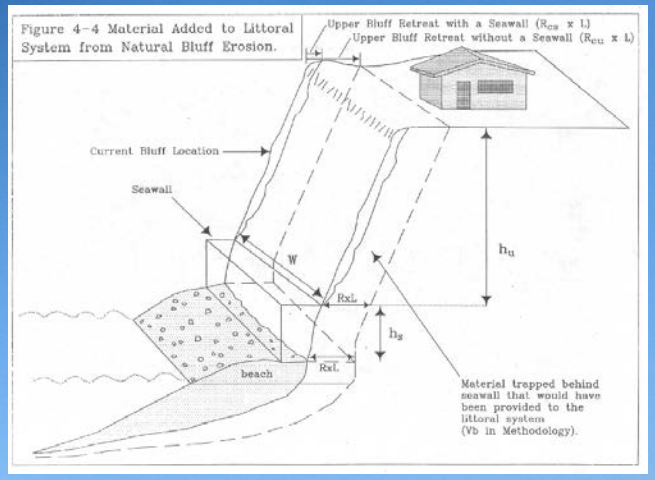
Live Oak Shoreline—Santa Cruz County

Charles Lester, California Coastal Commission, Assembly Select Comm on SLR

Shoreline Structure Impacts: Covered Beaches

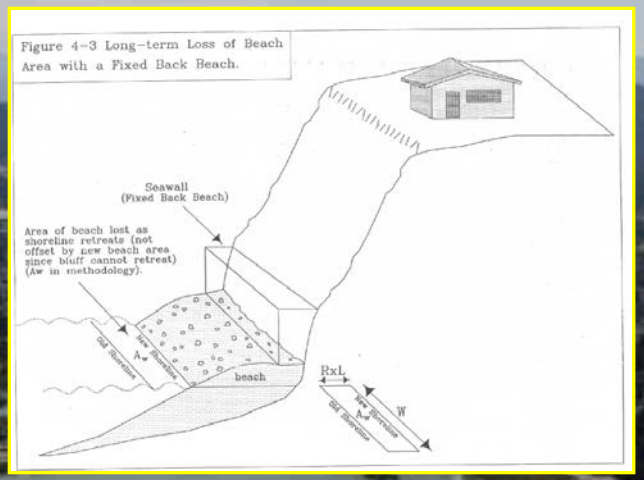


Shoreline Structure Impacts: Lost Sand Supply



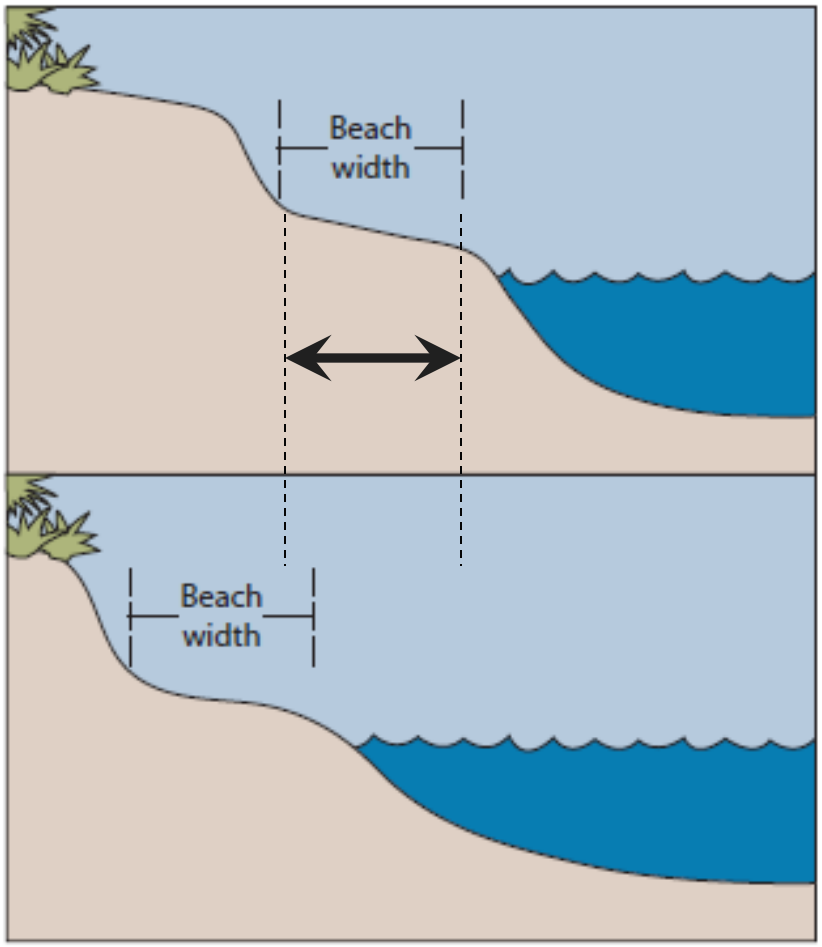
Shoreline Structure Impacts: Blocked lateral access

Shoreline Structure Impacts: Flooded Beaches

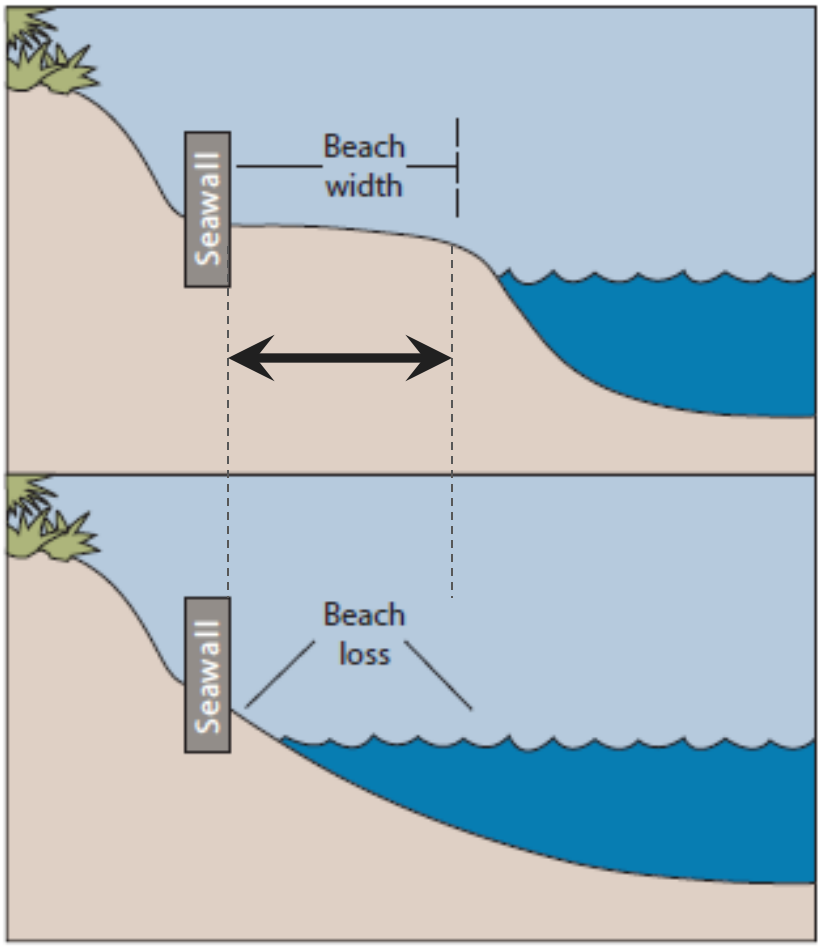


Passive Erosion Leading to Loss of Beach

Normal Beach Retreat



Blocked Beach Retreat



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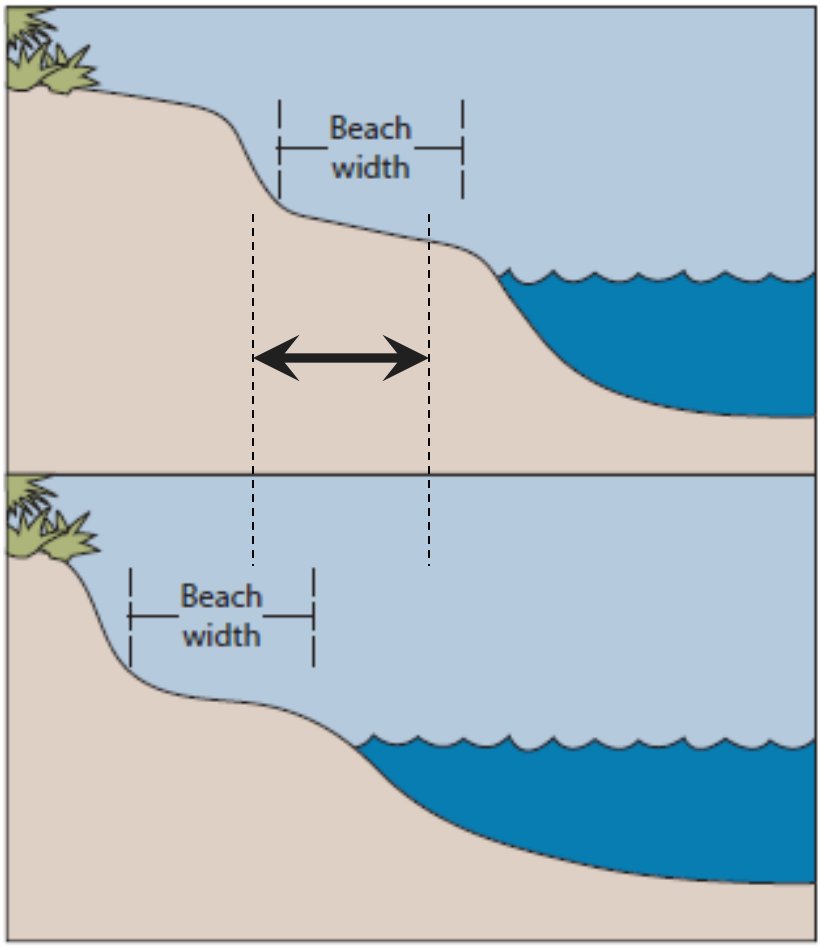

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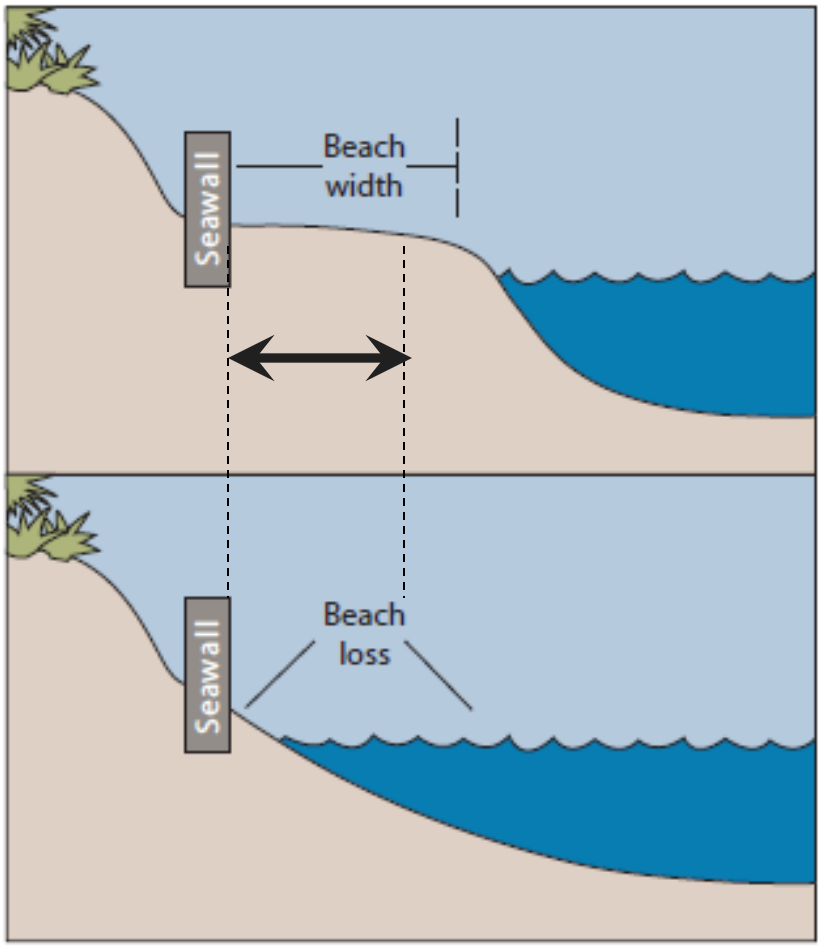

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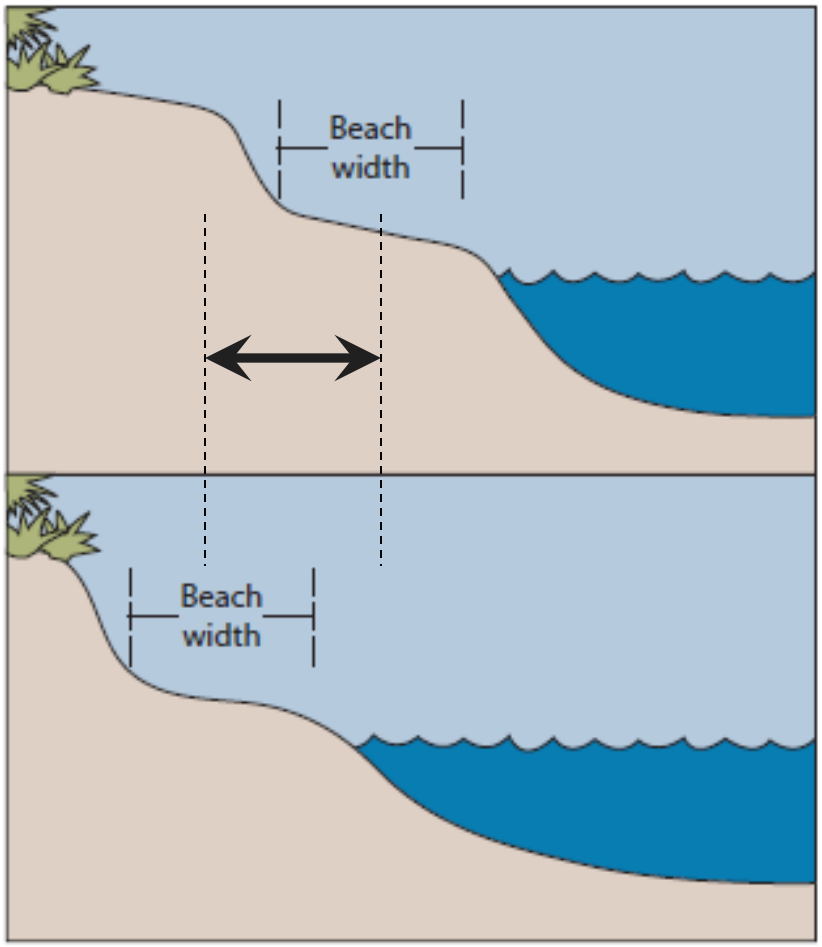

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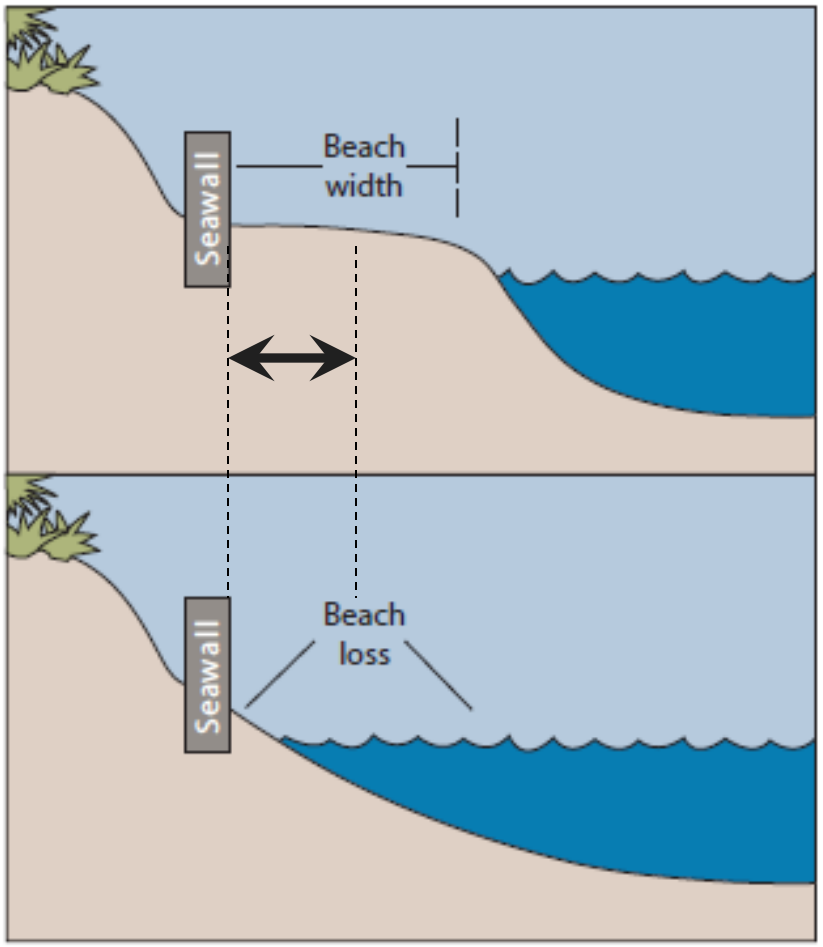
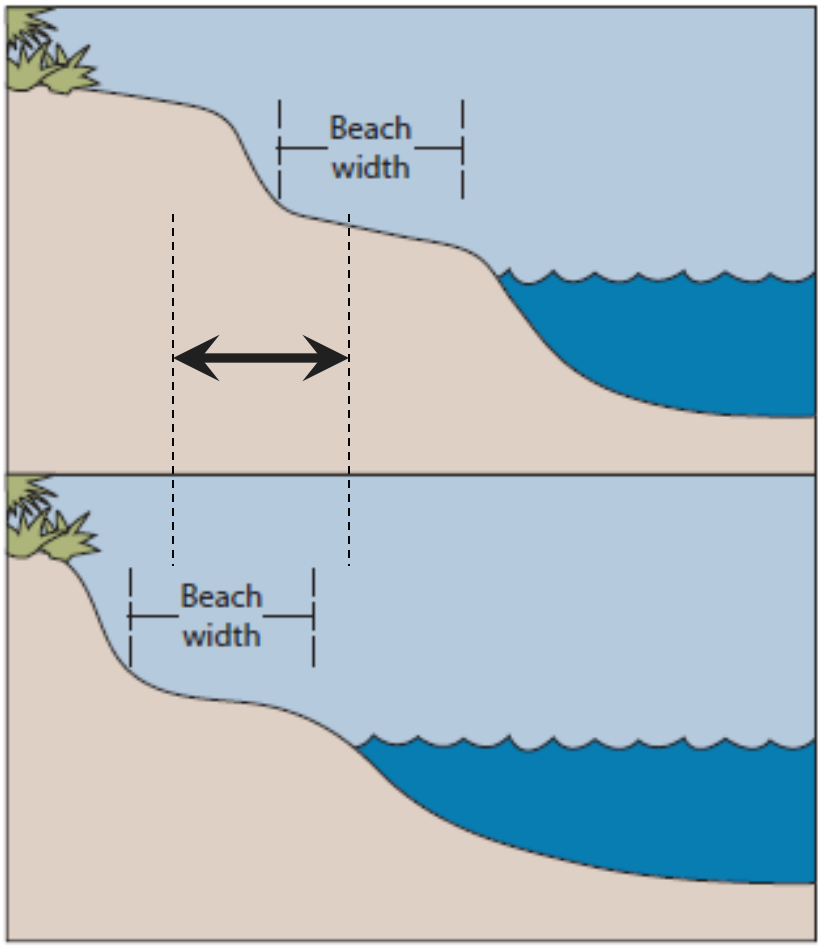
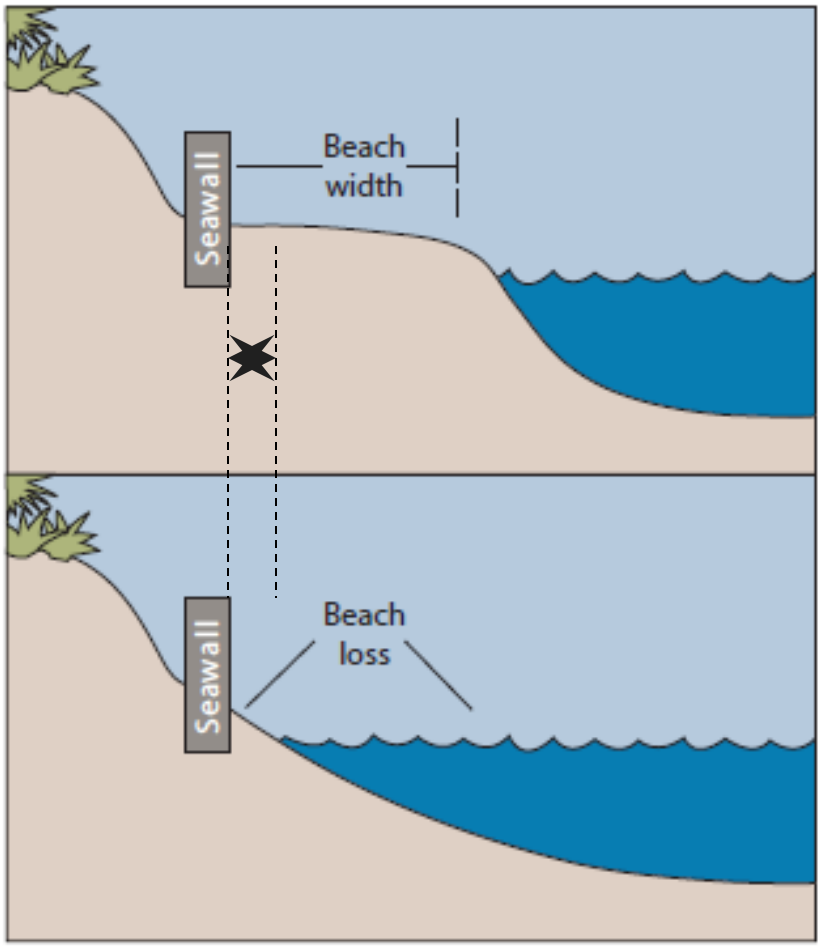


Passive Erosion Leading to Loss of Beach

Normal Beach Retreat



Blocked Beach Retreat



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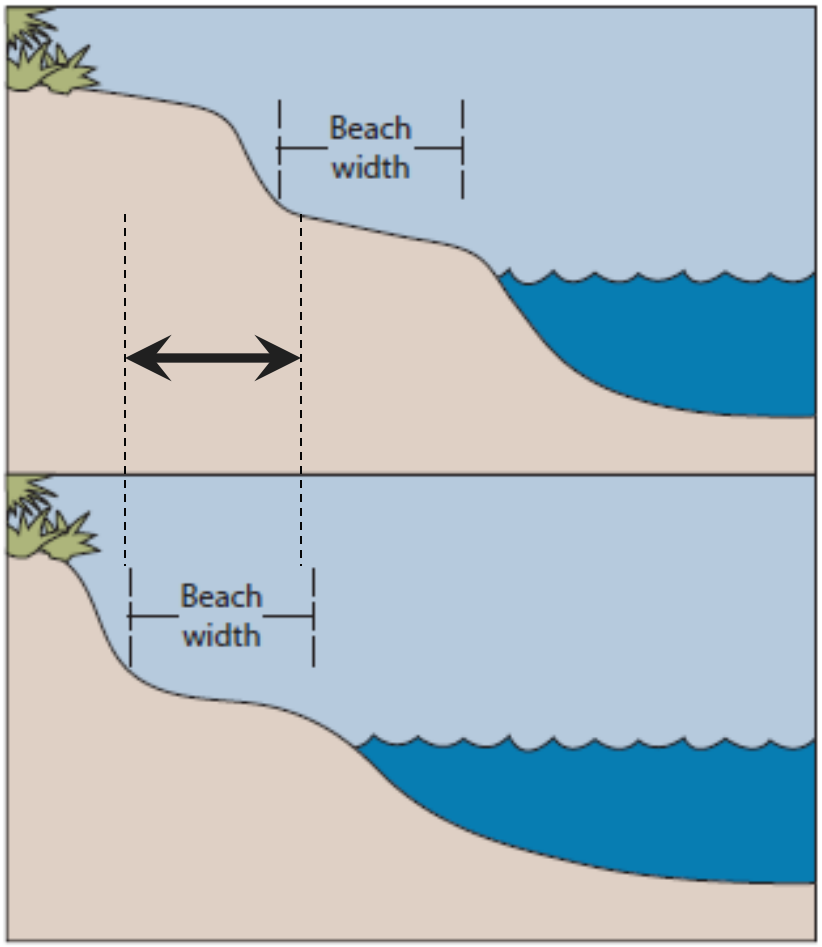

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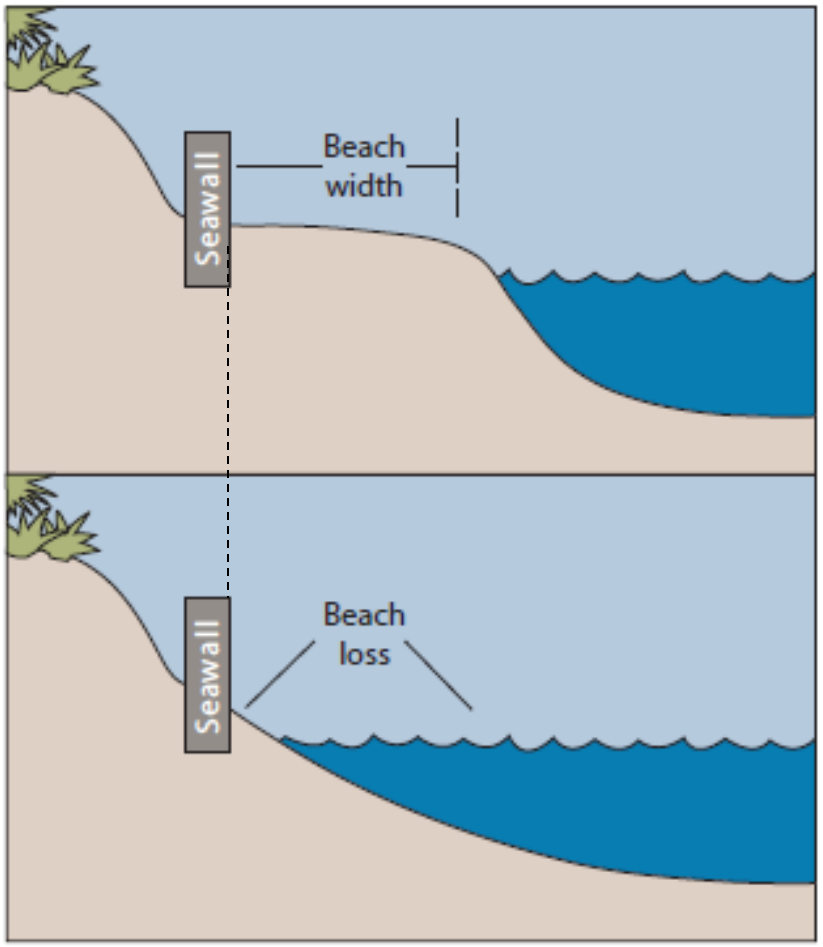
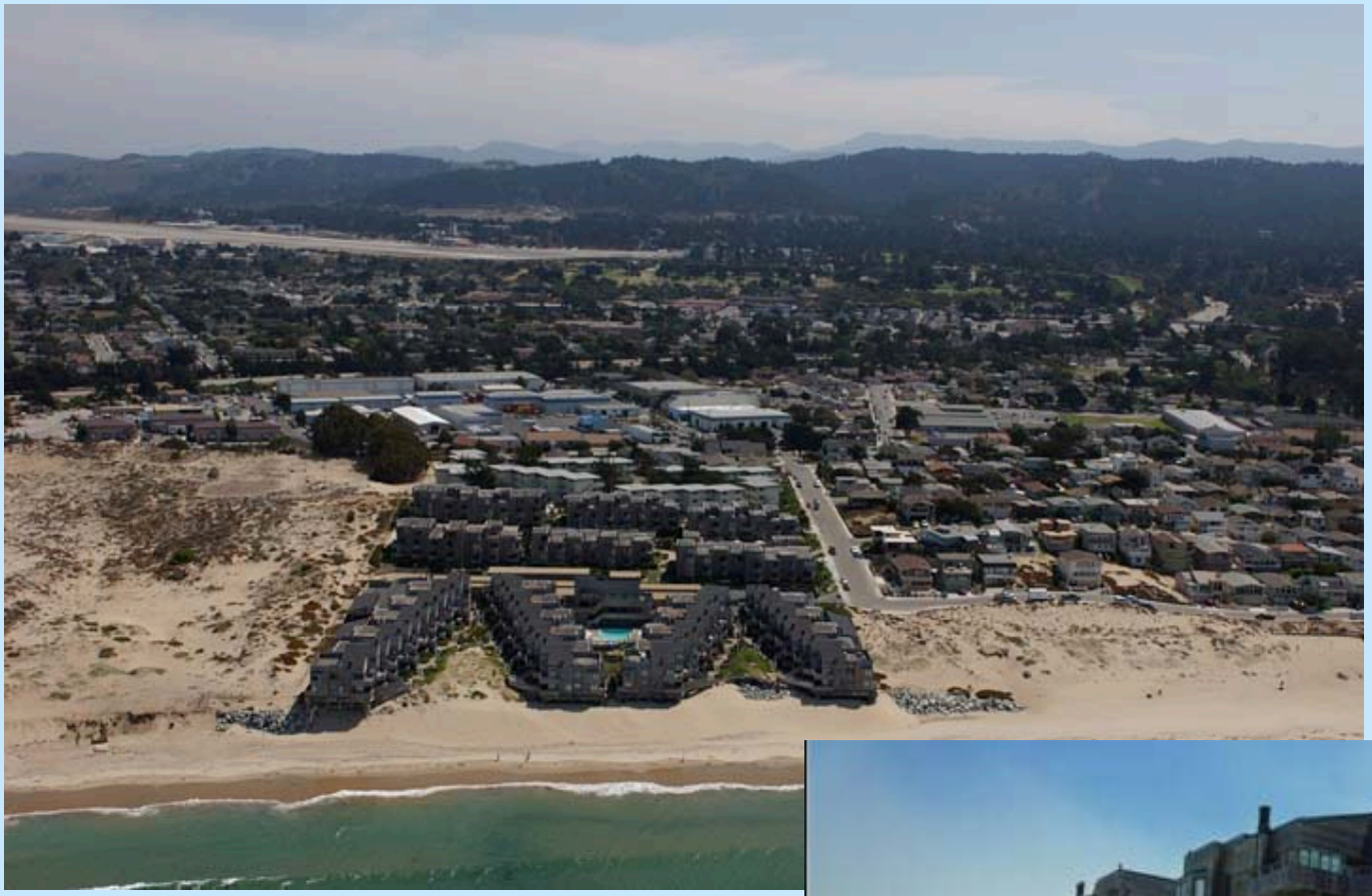


Shoreline Structure Impacts: Flooded Beaches

Shoreline Structure Impacts: Loss of beach/shoreline ecology

Shoreline Structure Impacts: Aesthetic Impacts



Ocean Harbor House: $5.3 million fee (50 yrs)

Internalizing the True Costs of Sea Walls

Seawall Aesthetics & Design

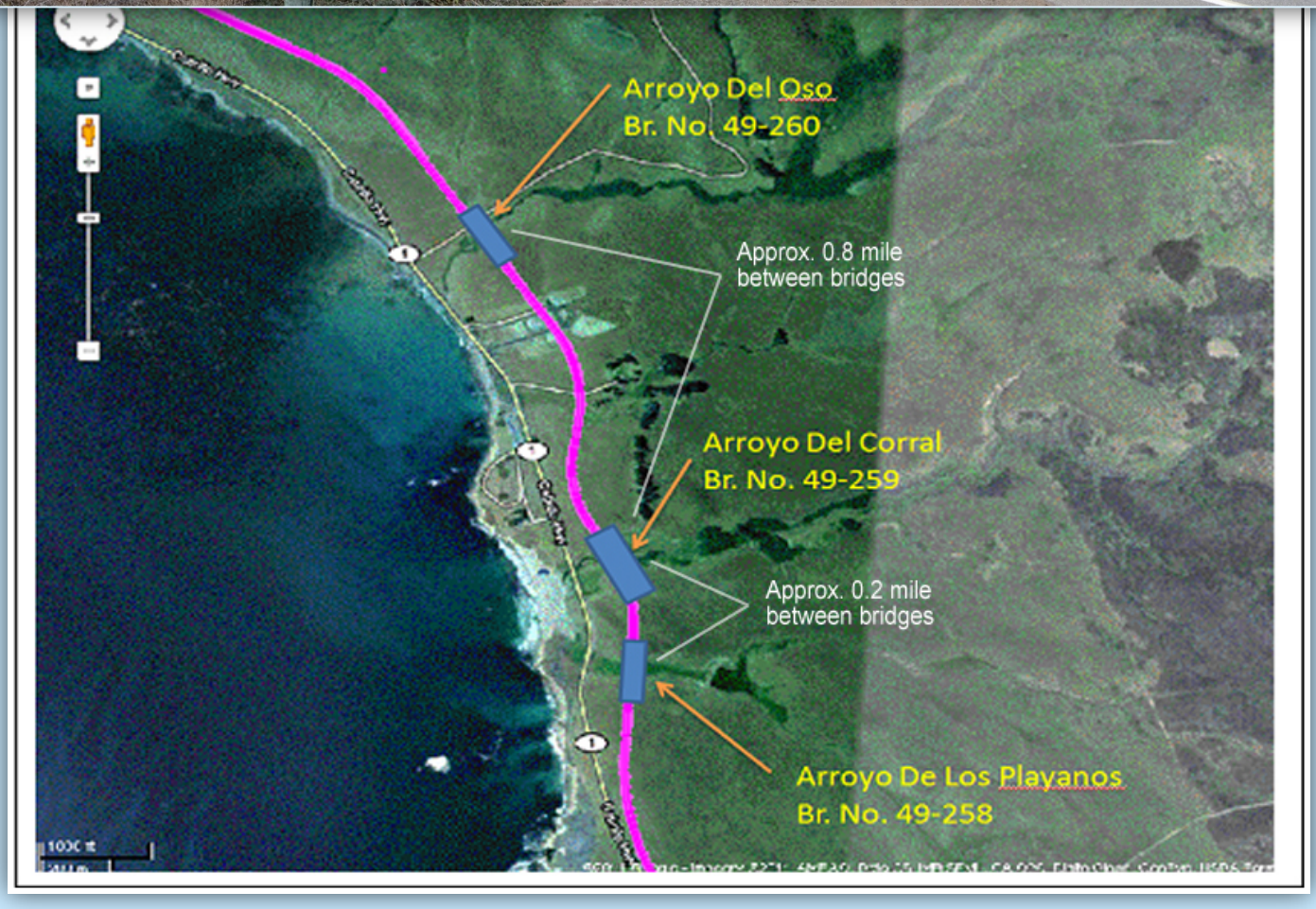
Ritz Carlton – Half Moon Bay

Ritz Carlton – Half Moon Bay

Charles Lester, California Coastal Commission, Assembly Select Comm on SLR

Planned Retreat for Major Public Infrastructure – Highway 1

Piedras Blancas Realignment – SLO County



Planned Retreat for Major Infrastructure

Post WWII Development Boom

Santa Cruz Co, Opal Cliffs -- **1943**

Santa Cruz Co, Opal Cliffs -- **1967**

Source: http://library.ucsc.edu/maps/view-digitized-aerial-flight-photos-by-county

Urban areas on Eroding Shorelines: Planned Retreat??

Reinvesting in Shoreline Development

Charles Lester, California Coastal Commission, Assembly Select Comm on SLR

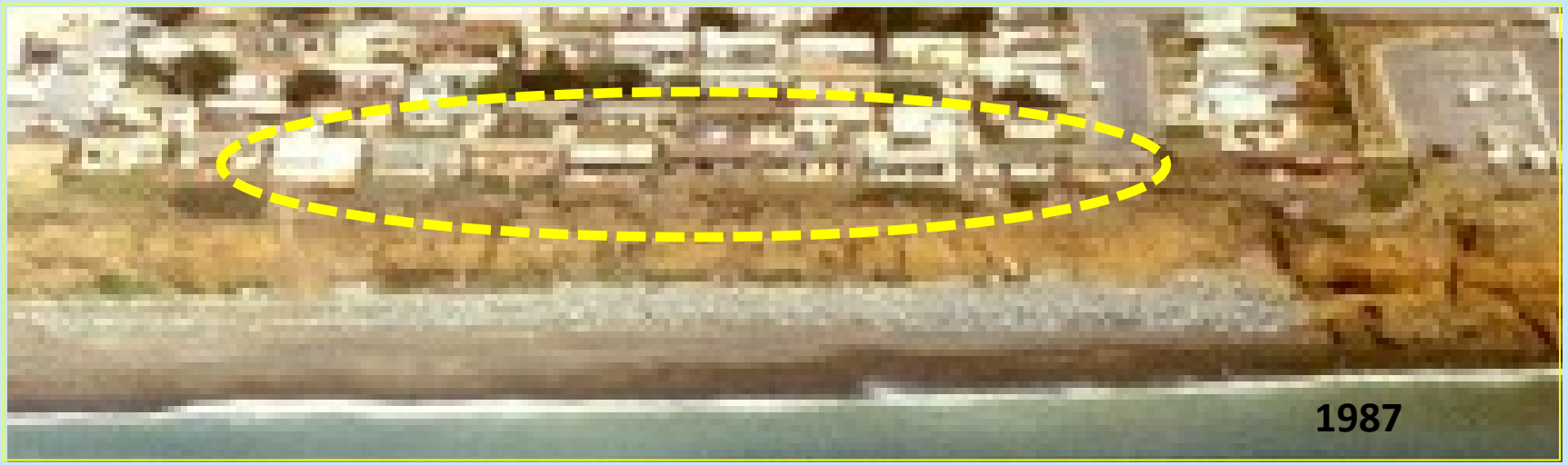
Reinvesting in Shoreline Development

Charles Lester, California Coastal Commission, Assembly Select Comm on SLR

LCPs and Redevelopment Rules

Gleason's Beach – Nature's Indifference

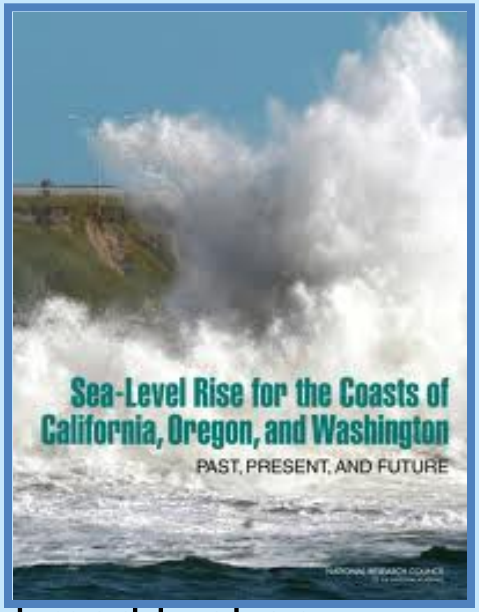
Pacifica – Revetments and Red Tags



Best Available Science on SLR

☐ National Research Council Report SLR Projections for California

Time Period	South of Cape Mendocino	North of Cape Mendocino
2000-2030	4 – 30 cm (1.5 – 12 inches)	-4 – +23 cm (-1.5 – 9 inches)
2000-2050	12 – 61 cm (5 – 24 inches)	-3 – + 48 cm (-1.2 – 19 inches)
2000-2100	42 – 167 cm (17 – 66 inches)	10 – 143 cm (3.6 – 56 inches)



- Most locations can use these projections without modification
- Humboldt Bay & Eel River Sea Level Rise
  - SLR is at faster rate than region North of Cape Mendocino
  - Modify projections to account for local vertical land motion

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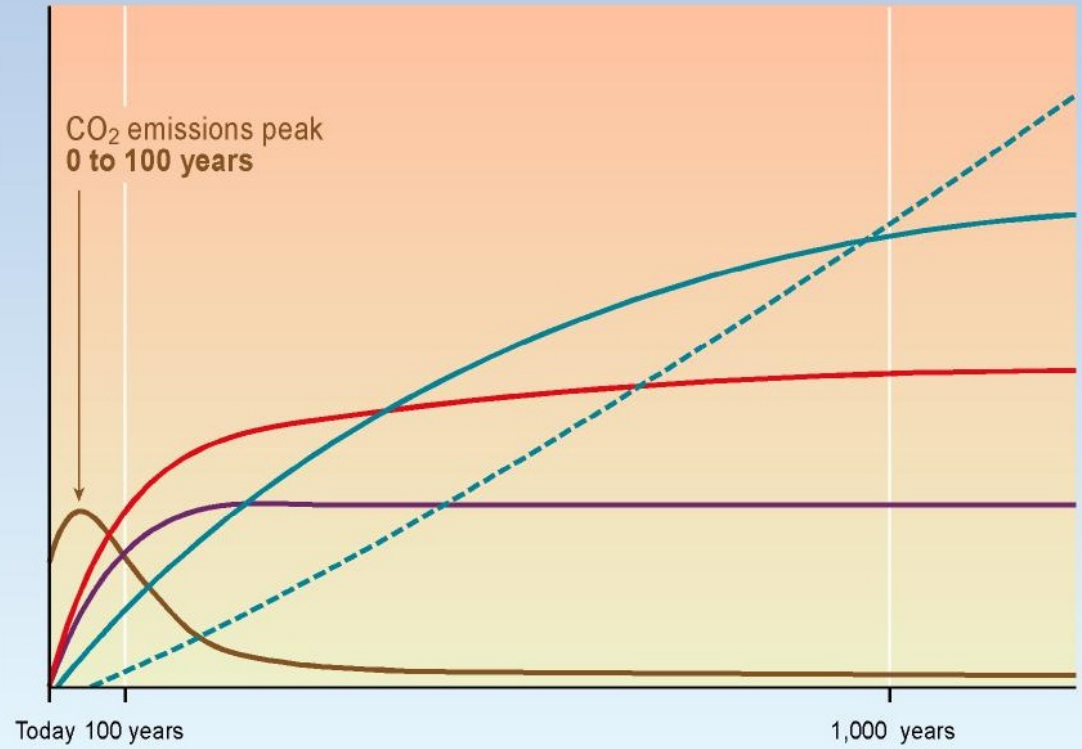
CO_2 concentration, temperature, and sea level continue to rise long after emissions are reduced



SYR - FIGURE 5-2

IPCC | INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

WMO UNEP

Sea-Level Rise Science and Projections

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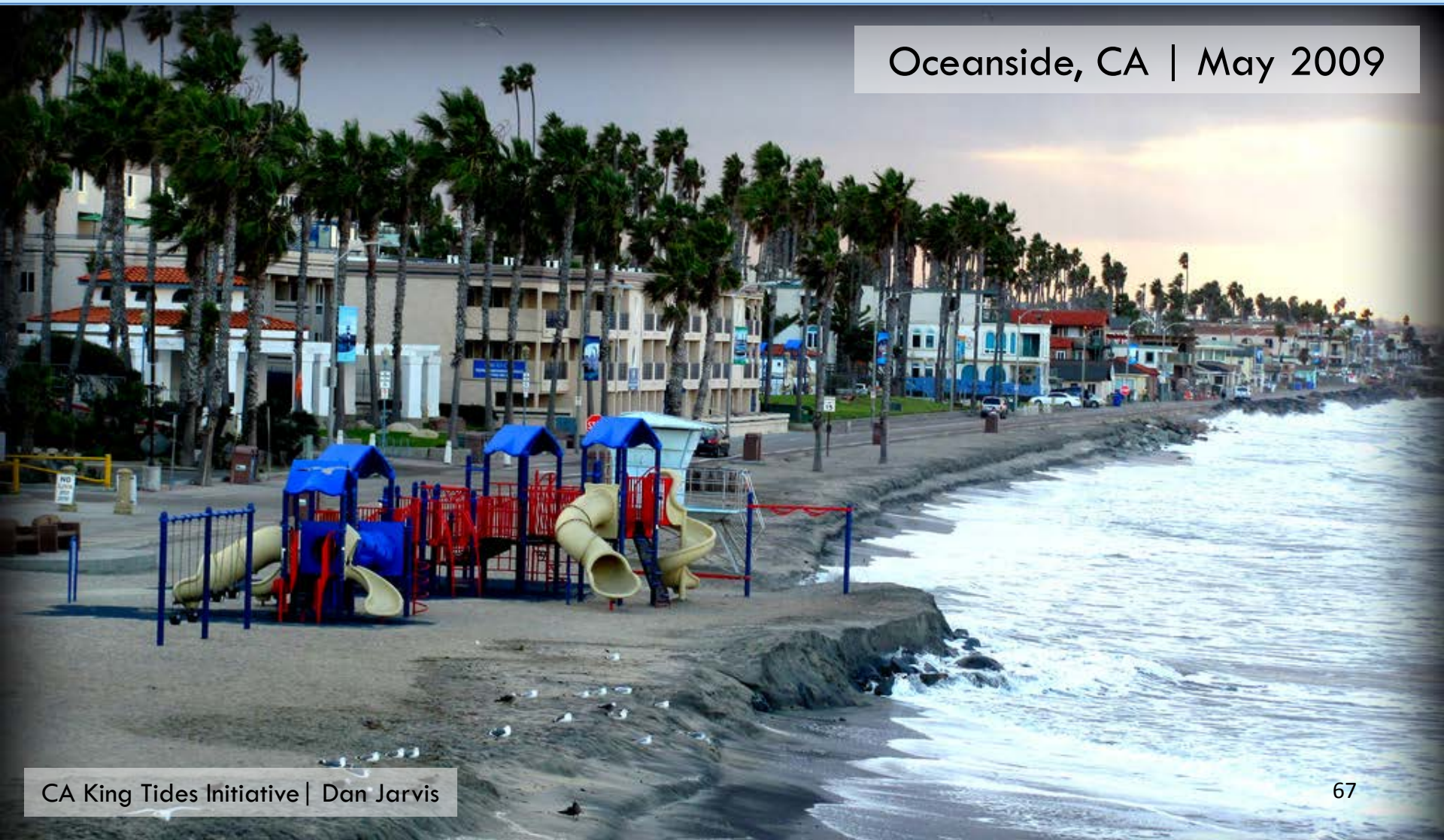
Impacts to California



CA King Tides Initiative| Dan Jarvis


Pasture near Liscom Slough, Arcata CA | Dec 2012

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Bolinas, Marin County| Dec 2011
CA King Tides Initiative


Ocean Beach, San Francisco
CA King Tides Initiative

CALIFORNIA COASTAL COMMISSION


Highway 1 at Surfer's Beach, Half Moon Bay | Feb 2011
CA King Tides Initiative | JSutton8

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Port of San Diego

http://commons.wikimedia.org

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Adaptation Challenge, Eroding Urban Areas: Solana Beach

Broad Beach, Malibu – getting thinner

- 114 homes
- Geological Hazard Abatement District (GHAD)
- $20 million initial investment in replenishment

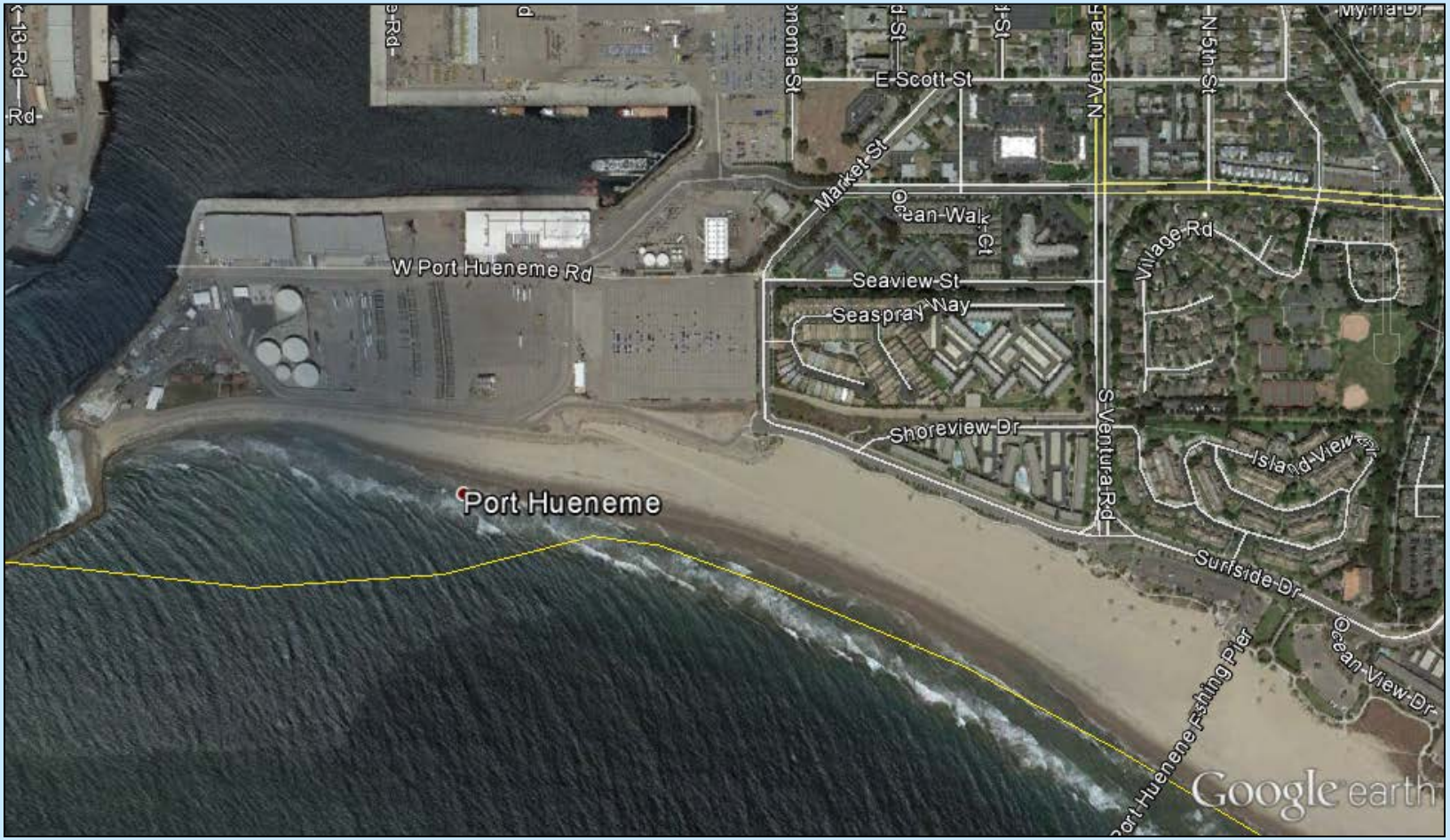
Western reach of Broad Beach, 1972

Western reach of Broad Beach, 2010

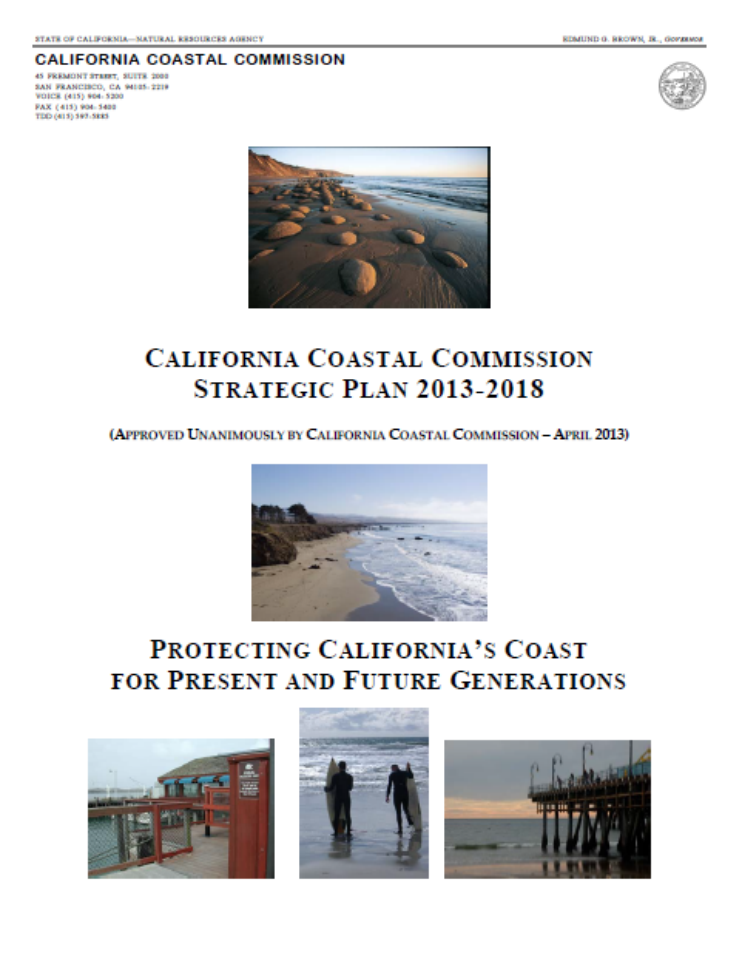
Broad Beach: Flooded Access Dedications?

Broad Beach: Covered Public Lands & Access

Port Hueneme – Maintaining a Beach or Protecting the Shore?



Coastal Commission Strategic Plan


STATE OF CALIFORNIA—NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., GOVERNOR

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CALIFORNIA COASTAL COMMISSION
STRATEGIC PLAN 2013-2018

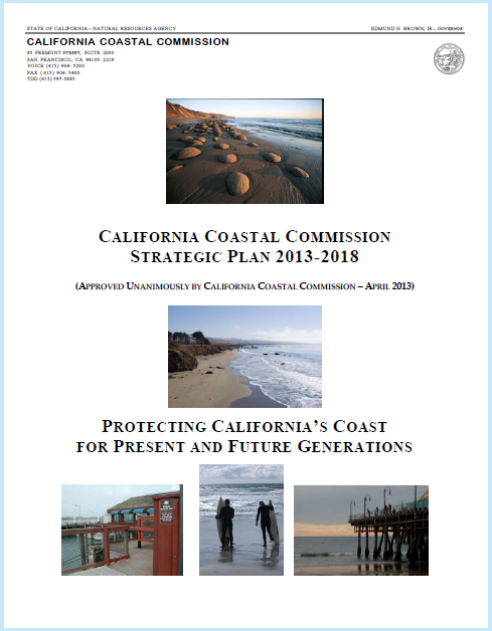
(APPROVED UNANIMOUSLY BY CALIFORNIA COASTAL COMMISSION – APRIL 2013)

PROTECTING CALIFORNIA'S COAST
FOR PRESENT AND FUTURE GENERATIONS

Multi-Pronged Strategy to Address Climate Change with three overarching objectives:

- 3.1. Developing Permitting and Planning Policy Guidance
- 3.2. Assessing Coastal Resource Vulnerabilities to Guide Development of regional local adaptation strategies
- 3.3. Reduce GHG emissions through SMART growth and other mitigation strategies

Coastal Commission Strategic Plan



Objective 3.1 – Develop Planning and Permitting Policy Guidance for Addressing the Effects of Climate Change on Coastal Resources

Actions:

3.1.1 Adopt general sea level rise (SLR) policy guidance for use in coastal permitting and LCP planning and amendment based on best available science, including the final report from the Natural Research Council of the National Academy of Science entitled, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (released June 2012).

3.1.2 Based on the general SLR policy guidance, identify and develop specific regulatory guidance for addressing coastal hazards, including recommendations for analytic methods for accounting for SLR and increased storm events in project analysis, standards for redevelopment and development in hazard zones (e.g. bluff top and flood zones), buffers for coastal wetlands, and policies for shoreline structure design and impact mitigation.

3.1.3 Develop work program to produce policy guidance for coastal permitting and LCPs to account for other climate change related impacts and adaptation planning including wetland, marine and terrestrial habitat protection, habitat migration, risk of wildfires, water supply and groundwater protection, etc.

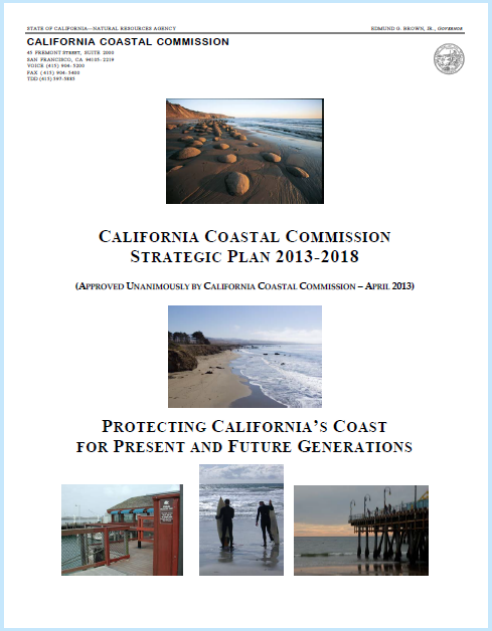
3.1.4 Provide public information and guidance through workshops, presentations to local government, etc. Assist local governments with interpretation of scientific or other technical information related to climate change and sea level rise that could be of use in adaptation planning.

3.1.5 Contribute to relevant state-wide efforts on climate change and adaptation as a member of the State's Climate Action Team – Coast and Ocean Working Group.

3.1.6 Coordinate with the Natural Resources Agency, Office of Planning and Research, California Emergency Management Agency and others to provide consistent guidance on climate change in updating general plans, hazard mitigation plans and other planning documents used by local governments.

3.1.7 Coordinate with the State Lands Commission to address sea level rise and shoreline change and implications for the management of public trust resources.

Coastal Commission Strategic Plan



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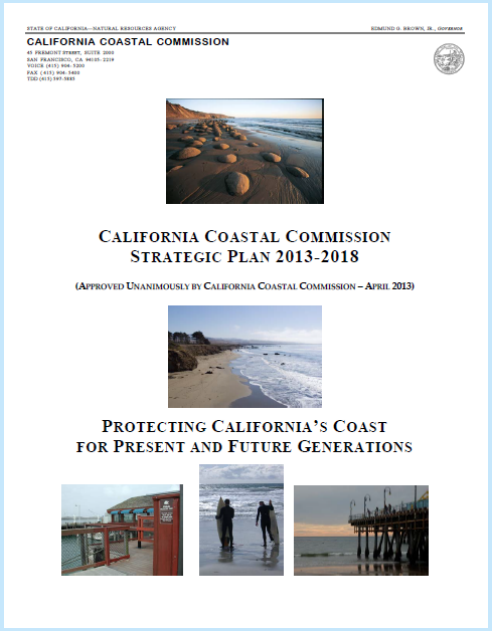

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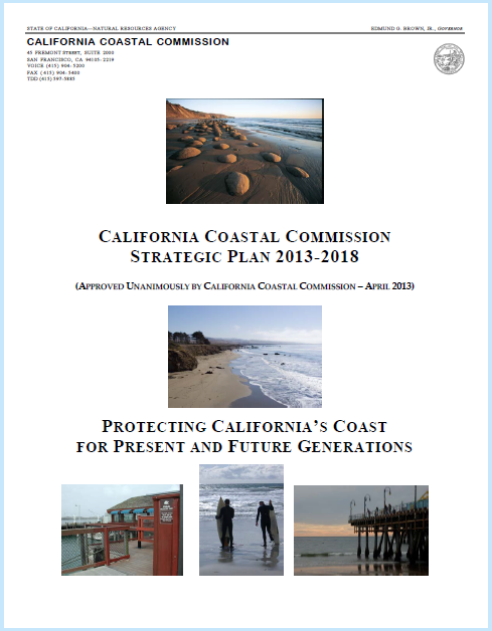
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STRATEGIC PLAN 2013-2018

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FOR PRESENT AND FUTURE GENERATIONS

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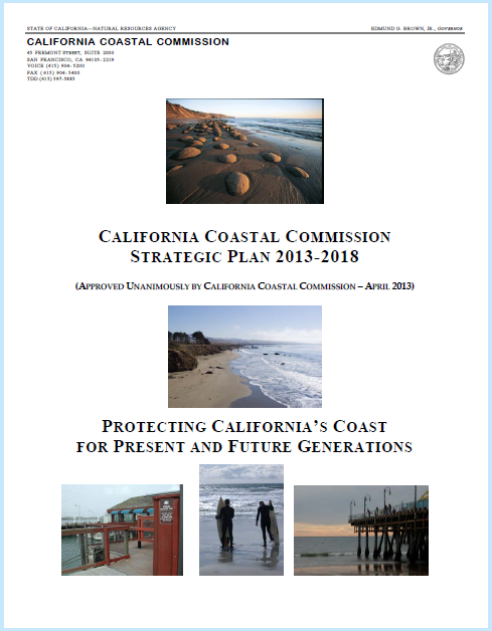
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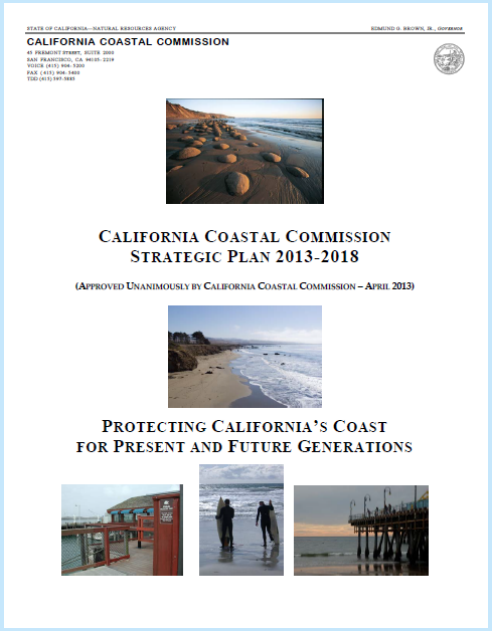
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FOR PRESENT AND FUTURE GENERATIONS

Objective 3.2 – Assess Coastal Resource Vulnerabilities to Guide Development of Priority Coastal Adaptation Planning Strategies

Actions:

3.2.1 Conduct a broad vulnerability assessment of urban and rural areas to identify priority areas for adaptation planning, such as community development, public infrastructure, public accessways, open space or public beaches at risk from sea level rise. Identify and participate in on-going vulnerability assessments and adaptation planning efforts as feasible.

3.2.2 Work with Caltrans and other public agency partners to assess and address roadway, rail, and other transportation infrastructure vulnerabilities, particularly along Highway One and other coastal roads and highways.

3.2.3 Work with the Department of Water Resources, SWRCB and local agencies to assess and address water and wastewater treatment plant vulnerabilities along the coast.

3.2.4 Work with the Conservancy, CDFG, US Fish and Wildlife (USFWS) and other partners to assess the vulnerability of wetlands and other sensitive habitat areas. Identify habitats that are particularly vulnerable climate change and/or habitats that may be important for future habitat migration (e.g. wetland transitional areas).

3.2.5 Work with the Coastal Observing Systems, researchers, and others to identify and develop baseline monitoring elements to better understand and monitor changes in coastal conditions related to sea level rise and other climate change impacts.

3.2.6 With the Conservancy and OPC, develop and implement a competitive grant program to provide funding to selected local governments to conduct vulnerability assessments and/or technical studies that can be used to assess a community's risks from climate change and inform updates to LCPs.

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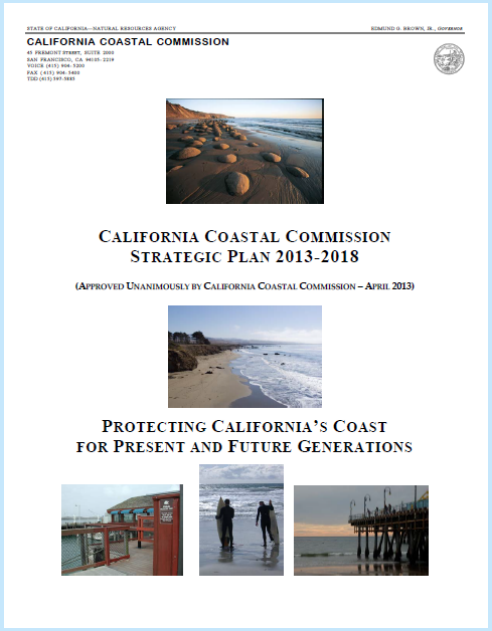

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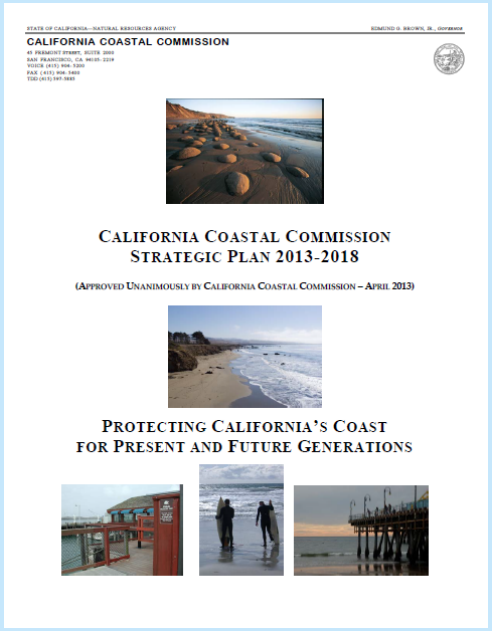

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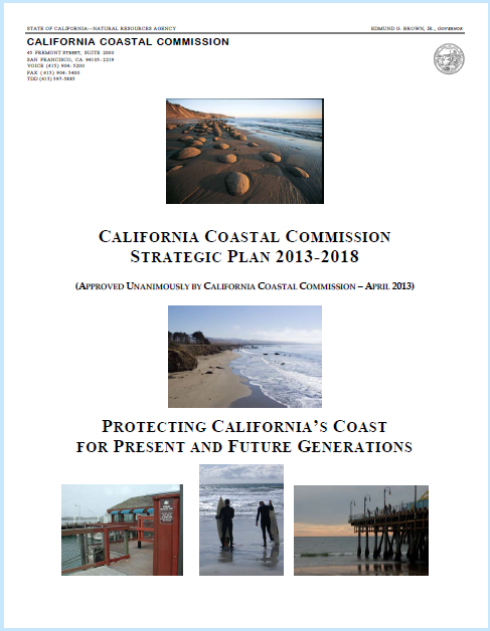
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PROTECTING CALIFORNIA'S COAST
FOR PRESENT AND FUTURE GENERATIONS

Objective 3.3 – Reduce Greenhouse Gas (GHGs) Emissions by Implementing Smart Growth, Other Mitigation Strategies, and Public Education

Actions:

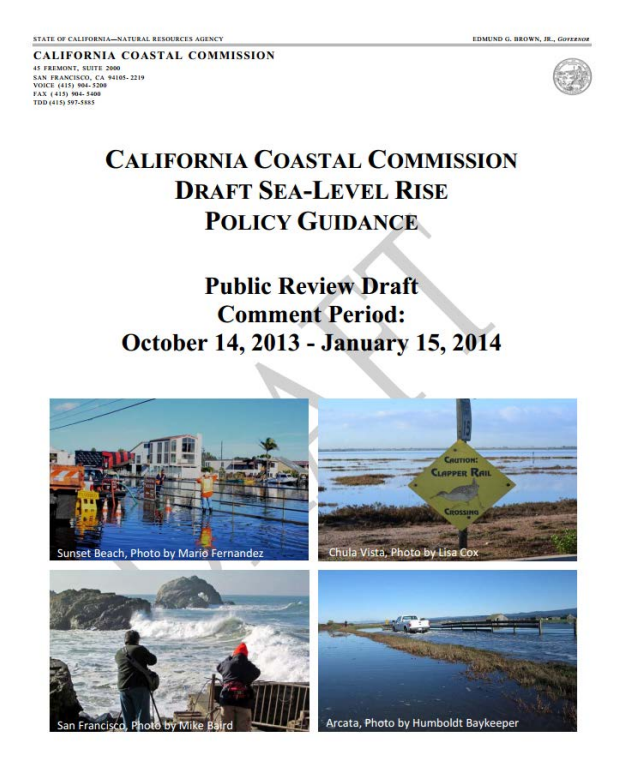
3.3.1 Collaborate with other state agencies to evaluate policy options to promote Smart Growth strategies, green building, and other GHG emission reduction strategies, such as mixed-use and higher density development where appropriate, transit-oriented development, Blueprint Planning (SB 375), transportation demand management, and low-impact development strategies.

3.3.2 Prepare policy guidance to facilitate expedited permitting of small-scale alternative energy projects as appropriate such as solar and wind.

3.3.3 Provide information and resources to educators and to the general public to increase understanding and encourage action related to coastal development planning and development to reduce GHGs.

3.3.4 Identify and implement feasible measures to reduce the carbon footprint of the Commission's business operations.

Draft Sea-Level Rise Guidance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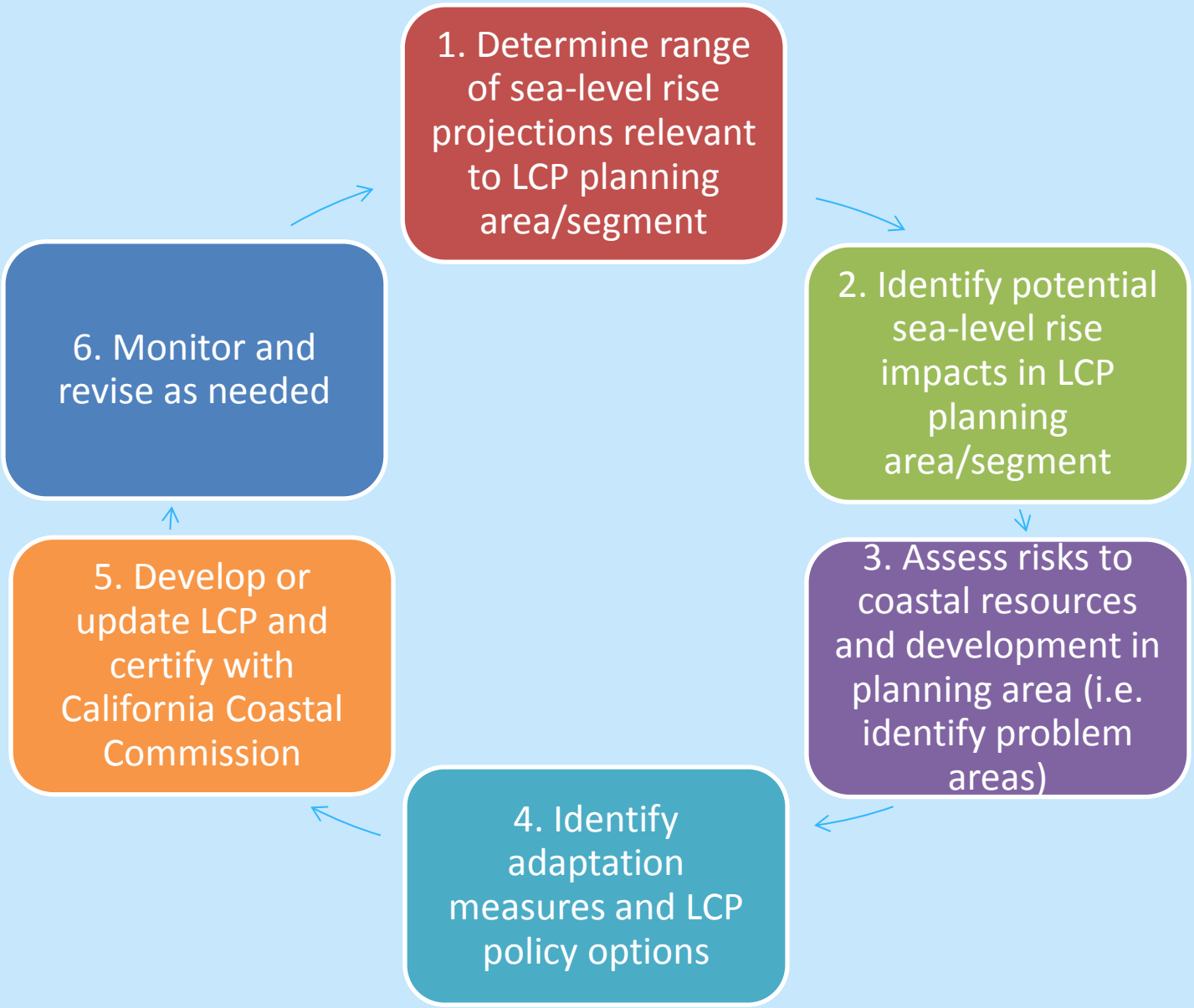
CALIFORNIA COASTAL COMMISSION
DRAFT SEA-LEVEL RISE
POLICY GUIDANCE

Public Review Draft
Comment Period:
October 14, 2013 - January 15, 2014

- Use Best Available Science
- Assess local risks and impacts
- Analyze Planning Scenarios and Development Constraints
- Identify Adaptation Measures
- Update LCPs/Design Projects to address hazards (be adaptive) and protect other coastal resources
- Monitor and Revise

Steps for Addressing SLR in LCPs



Charles Lester, California Coastal Commission, Assembly Select Comm on SLR

CALIFORNIA COASTAL COMMISSION

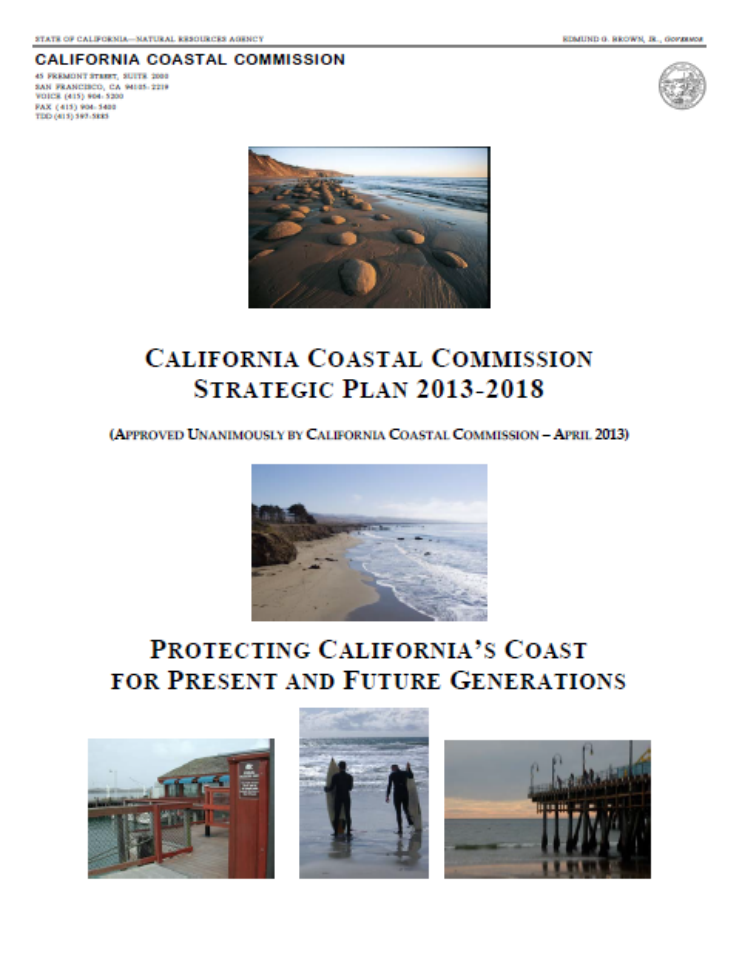
Steps for Addressing SLR in CDPs

1. Establish the projected sea-level rise range for the proposed project
2. Determine how sea-level rise impacts may constrain the project site
3. Determine how the project may impact coastal resources over time, considering SLR
4. Identify project design alternatives to both avoid resource impacts and minimize risks to the project
5. Finalize project design and submit permit application

LCP Certification and Permit Authority Delegation

- 76 Local Governments in the Coastal Zone:
  - **15 Counties**
  - **61 Cities**
- Most (60) have certified LCPs in whole or part, which covers 85% of the geographic area of the CZ
- But, most LCPs are decades old, and have not been updated comprehensively. 15% of the coastal zone still uncertified (mostly cities).

Coastal Commission Strategic Plan


STATE OF CALIFORNIA—NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., GOVERNOR

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CALIFORNIA COASTAL COMMISSION
STRATEGIC PLAN 2013-2018

(APPROVED UNANIMOUSLY BY CALIFORNIA COASTAL COMMISSION – APRIL 2013)

PROTECTING CALIFORNIA'S COAST
FOR PRESENT AND FUTURE GENERATIONS

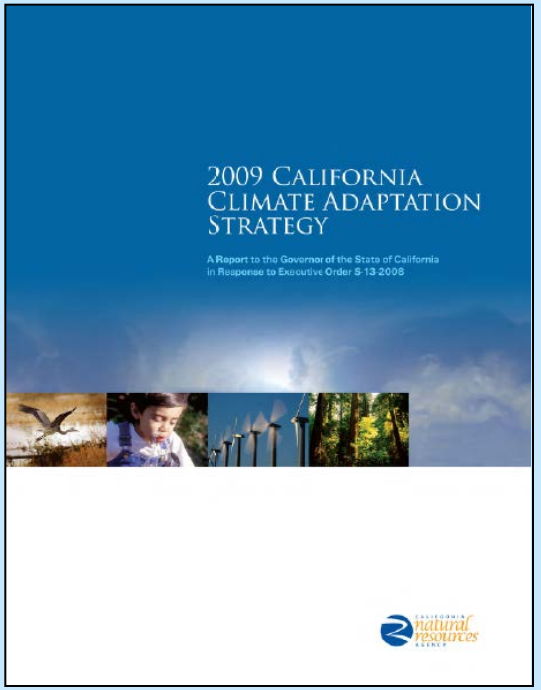
Multi-Pronged Strategy to Enhance LCP Program, including objectives:

- 4.1. Pursue Completion of LCP Certification
- 4.2. Work with Local Governments to Update LCPs Where Feasible
- 4.4. Continue to Improve Communication and Planning with Local Government

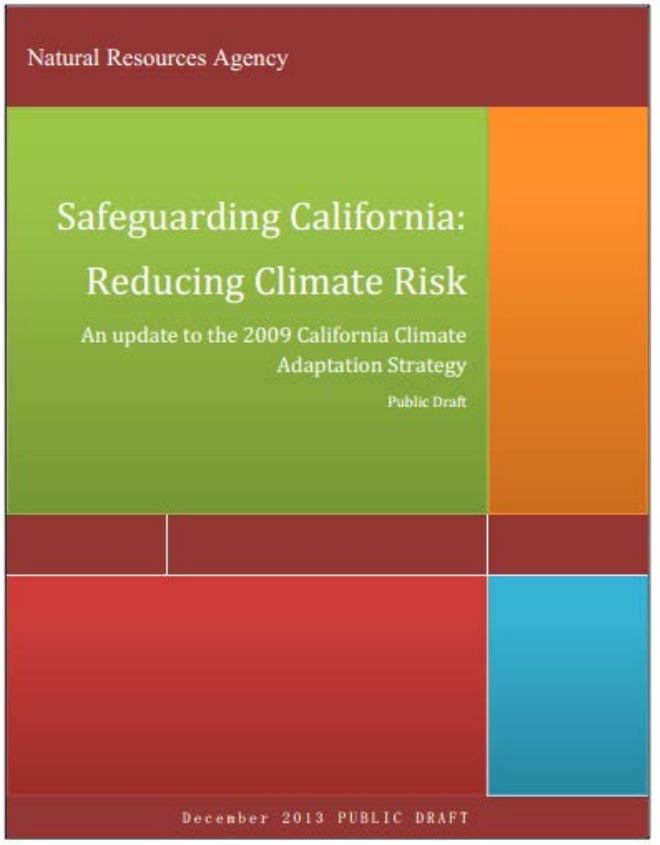
2009 Climate Adaptation Strategy 4: Support Regional and Local Planning for Addressing Sea-Level Rise Impacts

Amend Local Coastal Plans and General Plans to Address Climate Change Adaptation:

By 2011, or within one year after development of the tools or guidance necessary to support such amendments ***and if funding is secured,*** *all coastal jurisdictions, in coordination with the Coastal Commission, should begin to develop amended LCPs that include climate change impacts.*



Safeguarding California Plan



"Continued investments to update LCPs is necessary since most LCPs currently do not include plans for reducing risk from sea-level rise."(p. 176)

Charles Lester, California Coastal Commission, Assembly Select Comm on SLR

LCP Strategies are context dependent

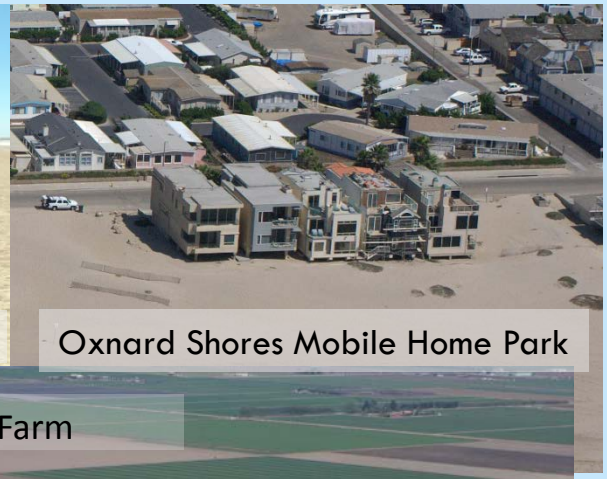
- **Stand and defend?**
  - Hard - - seawalls, revetments, deep caissons
  - Soft
    - Beach Replenish/sand management?
    - Groins or other offshore structural solutions?
- **Elevate?**
- **Move back (managed/planned retreat)?**

➢ **Solution will depend on context and social cost/benefit analysis**

LCP Adaptation Planning is Complex


McGrath State Beach


Oxnard Beach State Park


Oxnard Shores Mobile Home Park


Visitor serving facilities, Oxnard

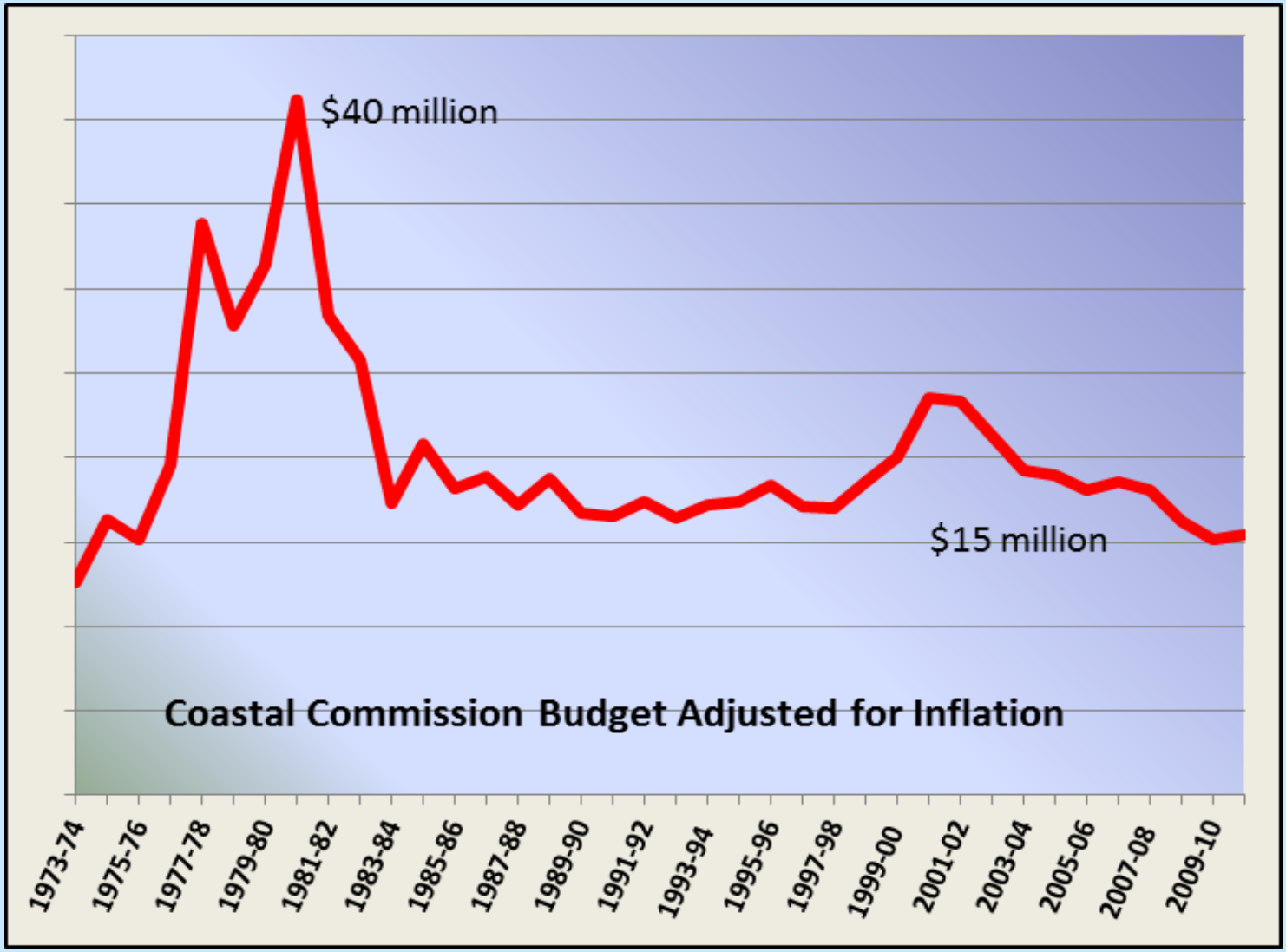

Oxnard Farm Fields

Reliant Ormand Beach Generating Station


Port of Hueneme


Ormand Beach Wetlands

State Coastal Planning Capacity



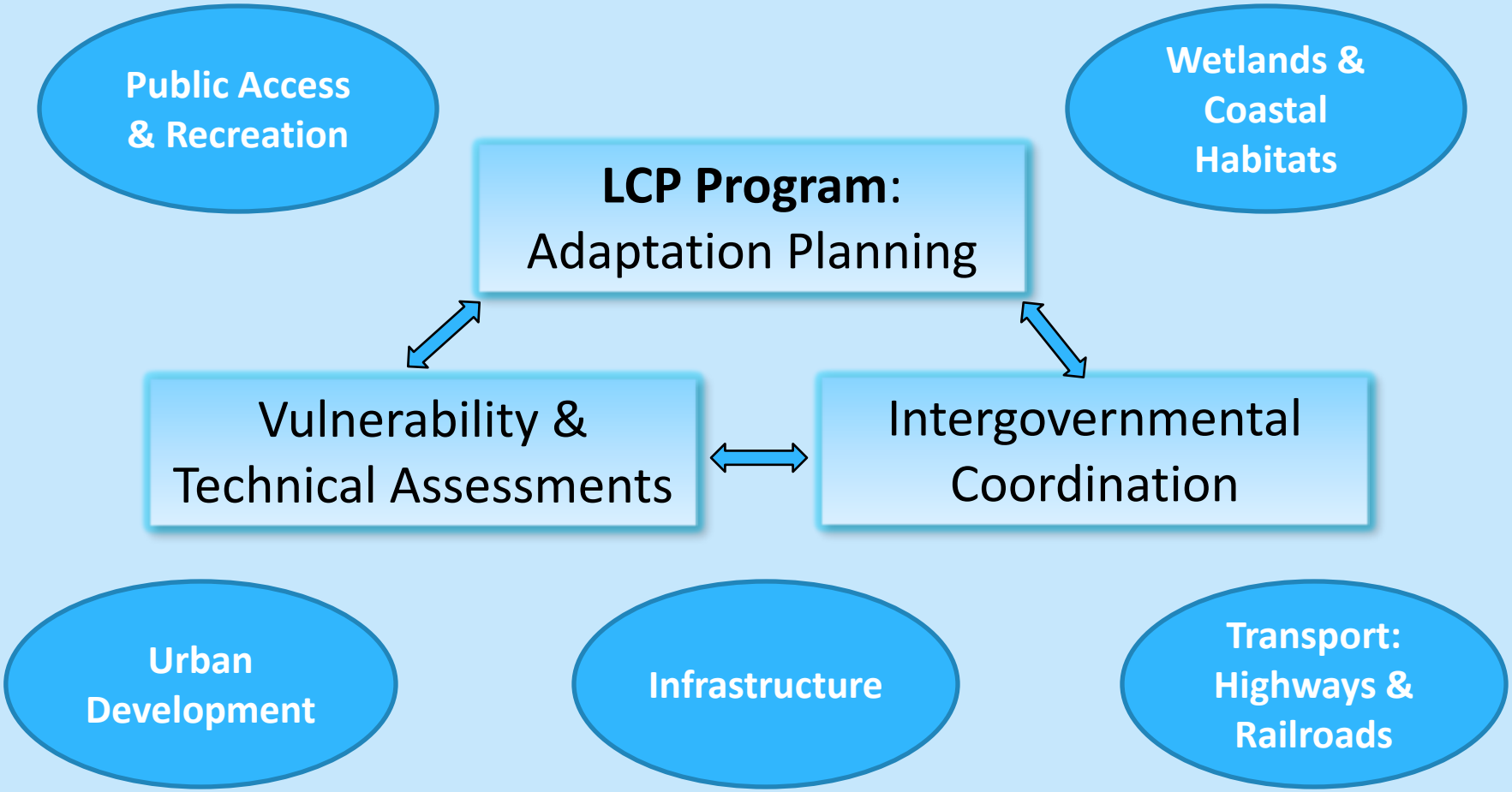
LCP Planning Capacity

- State Commission and Local Governments have limited capacity for Adaptation Planning
- Effective collaborative planning takes time and community involvement
- Coordinated funding strategy with OPC and the State Coastal Conservancy for local government
- FY 13-14 budget augmentation for Commission ($3 million) and Local Government ($1 million)

LCP Grants: $5.2 million requested (28 applications), **$1 million** awarded January 8

1. Humboldt County - $29,000
2. City of Arcata- $54,000
3. Marin County- $54,000
4. Half Moon Bay- $75,000
5. Pacific Grove- $130,000
6. City of Goleta- $125,000
7. City Santa Barbara- $123,000
8. City of Los Angeles- $100,000
9. Hermosa Beach- $100,000
10. San Clemente- $90,000
11. Solana Beach- $120,000

Coastal Adaptation Strategy



We will adapt.
The questions are:
How? and When?

Coastal Resiliency -- Stilwell Hall, Fort Ord

Coastal Resiliency -- Stilwell Hall, Fort Ord

City of Monterey – Window on the Bay

City of Monterey – Window on the Bay

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